

State of Alaska

Model Standing Orders  
and  
Treatment Protocols  
for  
MICP

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**Field Manual**

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## INTRODUCTION

- This document is a subset of the Model Standing Orders and Treatment Protocols Reference Manual. It only contains the treatment sections from the reference manual. It is designed to be a Field Guide usable by the medic in the streets. It is intended that the two versions of the document be issued and taught together. This abbreviated version does not include information about assessment or criteria for following a particular protocol for a particular patient presentation. It is simply a listing of treatments usable as a memory aid.
- The advanced life support orders in this document must be reviewed and approved by a physician medical director before EMTs and MICPs may perform advanced life support.
- These protocols are fairly liberal. They do not require contacting medical control for many orders. This is in recognition of the communication difficulties in this state. As a general style within the text, the items prefaced by "consider" or "anticipate" should be interpreted as requiring on-line medical direction. It is recommended however that medical control be contacted by voice when possible for every patient contact.
- Treatments and procedures listed herein follow the State of Alaska curricula with few exceptions. You may perform the BLS portion of this protocol. ALS treatments/procedures may only be performed under the direction of a physician, either by direct verbal communications or through physician signed standing orders



## **DEATH IN THE FIELD (DNR/DOA)**

### **I. WITHHOLDING RESUSCITATION:**

- A. An EMT/MICP may withhold resuscitation efforts when the patient has injuries/illness incompatible with life. This includes cardiac arrest accompanied by:
  - 1. Blunt trauma.
  - 2. Incineration.
  - 3. Decapitation.
  - 4. Open head injury with loss of brain matter.
  - 5. Detruncation.
  - 6. Rigor mortis.
  - 7. Post mortem lividity.
  - 8. 30 minutes of CPR performed on a patient who is NOT hypothermic before the EMT/MICP arrival without a return of spontaneous respiration or pulse, and ALS isn't available.
  - 9. Evidence of enrollment in Comfort One or other DNR program and confirmation of patient's identity.

### **II. TERMINATING RESUSCITATION:**

- A. When unable to establish voice communications with a physician, an EMT/MICP with a certified EMS service may terminate efforts at resuscitation under the conditions listed below:
  - 1. 30 minutes of CPR was performed by the EMT/MICP on a patient who is NOT hypothermic without a spontaneous return of respiration or pulse, and ALS isn't available.
  - 2. 30 minutes of ALS has been provided to a patient who is NOT hypothermic without spontaneous return of pulse or respiration.
  - 3. Hypothermic patient has received at least 60 minutes of CPR in conjunction with rewarming techniques (see Cold Emergencies guidelines) with no spontaneous return of pulse or respiration.
  - 4. Once evidence of enrollment in Comfort One or other DNR program is established and the identity of the patient confirmed.

### **III. PRONOUNCEMENT OF DEATH:**

- A. Note and record time of pronouncement.
- B. If death was pronounced en route, reattempt communications with medical control. Transport the deceased according to local protocol. If no protocol exists, contact law enforcement in that jurisdiction for instructions.
- C. If death was pronounced at the scene, it is considered an unattended death:
  - 1. Notify law enforcement and if appropriate, the State Medical Examiner's Office (1-888-DECEASE).



2. Treat the scene as if it were a crime scene. Do not move the body unless necessary to prevent further destruction of the scene.
3. Protect the scene and minimize the number of personnel at the scene.
  - a) If in a residence or building; remember what you've touched, avoid touching more objects and using the residence phone.
  - b) Personnel should exit the scene by the same route they took to enter if possible.
  - c) Once the scene is secured, one controlled checkpoint should be used for entering and exiting the scene.
4. Leave any tubes, IVs, EKG electrodes, and/or defibrillator patches in place.
5. Don't disturb clothing, jewelry, pocket contents, or personal effects.
6. Report to law enforcement before leaving the scene:
  - a) The condition of the scene and the placement of objects, etc.
  - b) Personnel involved at the scene and their roles.
  - c) Any statements made by the patient before death.

## **REPORTING REQUIREMENTS**

### **I. AS 47.17.010-REPORTING CHILD ABUSE AND NEGLECT**

- A. EMTs are required to report suspicions of child abuse or neglect.
- B. The report must be made to the Office of Children's Services (OCS) of the Department of Health and Social Services (1-800-478-4444) or, if the OCS cannot be reasonably contacted, the EMT may report his or her suspicions to the nearest peace officer.
- C. Notification of your medical director or EMS supervisor is not sufficient to comply with the reporting requirements.

### **II. AS 47.24.010-REPORTS OF HARM**

- A. Relates to abuse of persons 18 years of age or older who, because of physical or mental impairment, are unable to meet their own needs or to seek help without assistance.
- B. Under this statute, EMTs and MICPs are required to report suspicions that a vulnerable adult suffers from abandonment, exploitation, abuse, neglect, or self-neglect.
- C. The report must be made within 24 hours after first having cause for the belief. The number for submitting reports of harm is: 1-800-478-9996, or in Anchorage, 269-3666.
- D. If an elderly person is in danger or has suffered harm, the local law enforcement agency should be contacted immediately and the report of harm made to the Division of Senior and Disability Services the next business day.

### **III. AS 08.64.369-HEALTH CARE PROFESSIONALS TO REPORT CERTAIN INJURIES**

- A. EMTs and MICPs are required to report certain injuries. These injuries include:
  - 1. Second and/or third degree burns covering five percent, or more, of the patient's body;
  - 2. a burn to the patient's upper respiratory tract or laryngeal edema due to the inhalation of superheated air;
  - 3. a bullet wound, powder burn, or other injury apparently caused by the discharge of a firearm;
  - 4. an injury apparently caused by a knife, axe, or other sharp object, unless the injury was clearly accidental; and
  - 5. an injury that is likely to cause the death of the patient, unless the injury was clearly accidental.
- B. An oral report must be made promptly to the Department of Public Safety (DPS). Written reports must be made within three days to DPS.



## SHOCK

### I. GENERAL TREATMENT

- A. Ensure neutral, in-line **spinal stabilization if indicated.**
- B. **Ensure a clear airway and adequate breathing.**
  - 1. **Consider suction, positioning, and airway adjuncts.**
  - 2. **Administer high flow O<sub>2</sub> by non rebreather mask.**
  - 3. **Assist ventilation** as needed.
  - 4. Perform **endotracheal intubation as indicated.**
- C. **Control hemorrhage.**
- D. Initiate **basic shock treatment** (supine, feet elevated, insulate).
- E. **Consider PASG** if shock is from controllable hemorrhage and patient does not have respiratory distress or injuries to chest or abdomen.
- F. **Monitor ECG Lead II**

### II. HYPOVOLEMIC, SEPTIC, AND NEUROGENIC SHOCK

- A. Establish **one or two IVs** of normal saline or ringer's lactate.
- B. **Run the IV solution wide open, reassessing vital signs after every 250 ml.**
  - 1. For **children less than eight**, place an intraosseous catheter (**IO**) if IV access is not quick. Use **20ml/kg fluid boluses** in place of wide-open fluids.
  - 2. If the patient has **hemorrhagic shock**, start **IVs en route.**
  - 3. If the patient has an **uncontrollable hemorrhage** (e.g. internal bleeding), fluid resuscitate to and maintain a **systolic blood pressure of 90 mmHg.**
  - 4. If **non hemorrhagic or** hemorrhage is **controllable**, resuscitate to **normal vital signs.**
- C. If transport is delayed and volume loading is inadequate to prevent continued signs of shock, **discuss** the use of **pressor infusions with medical control.**
- D. Consider antibiotics for septic shock in the delayed transport setting. Discuss this option with medical control.

### III. CARDIOGENIC SHOCK

- A. **IV** normal saline at a **keep open rate**
- B. **IF pulse < 60 bpm or > 150 bpm,** refer to **Dysrhythmia Protocol.**
- C. For adults **if systolic BP is less than 100 mmHg**, administer dopamine, **5-15 µg/kg/min., IV infusion.** Titrate drip rate to achieve a systolic blood pressure >100 mm Hg.
- D. **Consult with medical control.**
- E. Suspect in children if the patient deteriorates after a 20ml/kg fluid bolus.

1. If present, administer dopamine, 2.5-20 µg/kg/min., IV infusion. Titrate dose to increased perfusion. To administer, multiply 6 x weight in kg. This is mg of dopamine to mix in 100 ml bag (also amount to be removed from bag) for total volume of 100 ml. 1ml/hr delivers 0.1mcg/kg.
2. Also consider an epinephrine infusion. To administer, multiply 0.6 x weight in kg. This is amount of 1:1,000 epi to mix in 100 ml bag (also amount to be removed from bag) for total volume of 100 ml. 1ml/hr delivers 0.1mcg/kg. Start at 20 ml/hour and titrate to desired effect.

IV. ANAPHYLACTIC SHOCK.

- A. Follow **Allergic Reactions/Anaphylaxis** protocol.

# **MEDICAL**

## **ABDOMINAL PAIN - NONTRAUMATIC**

### **I. MANAGEMENT**

- A. **Administer** O<sub>2</sub> according to the patient's needs.
- B. **Perform airway management** as indicated by the **Advanced Airway Management** protocol.
- C. Allow patient to seek a **position of comfort** and treat for shock.
- D. **Monitor** and record vitals every 5-15 minutes.
- E. Give nothing by mouth.
- F. Establish one or two IVs **of normal saline or ringer's lactate**. Use a macrodrip administration set. Draw bloods.
- G. If signs and or symptoms of shock are present, **run the IV solution wide open, reassessing vital signs after every 250 ml**. Follow the shock protocol.
- H. **Monitor ECG** lead II.
- I. Consider placing a nasogastric tube and foley catheter if the transport time is extended.

## ALLERGIC REACTION/ANAPHYLAXIS

### I. MANAGEMENT

- A. **Manage the airway and breathing and administer high flow O<sub>2</sub>.** Positive pressure may be needed to assist respirations (see **Airway** protocols).
- B. If wheezing or stridor is present, **administer albuterol by metered dose inhaler or 2.5-5.0 mg by nebulizer.** Repeat until wheezing, cough, or prolonged expiratory phase are resolved.
- C. Encourage patient to assume **position of comfort.**
- D. In cases of bee stings, examine the sting site. If the stinger is present, scrape along the skin to remove the venom sac.
- E. **Administer epinephrine (1:1,000) 0.3-0.5 mg, SQ** if:
  - 1. Wheezing or stridor is present;
  - 2. Edema of the pharynx, soft palate or tongue is observed;
  - 3. Signs of shock are observed (such as hypotension, confusion, weak pulse or tachycardia)
  - 4. May be repeated in 5-10 minutes PRN.
- F. Establish **one or two IVs of normal saline** using a macrodrip administration set.
- G. If signs and or symptoms of shock are present, **run the IV solution wide open, reassessing vital signs after every 250 ml.** Run the IV at TKO if signs and symptoms of shock resolve.
  - 1. For **children less than eight**, place an intraosseous catheter (**IO**) if IV access cannot be quickly obtained Use **20ml/kg fluid boluses** in place of wide-open fluids.
- H. **Monitor ECG** lead II.
- I. Contact medical control and **consider epinephrine (1:10,000) 0.3-0.5 mg, IVP** if:
  - 1. SQ epinephrine is ineffective
  - 2. The patient is in decompensated shock
- J. **Administer diphenhydramine, 25-50 mg, slow IVP.**
- K. **Consider methylprednisolone (Solumedrol) 125 mg IVP**
- L. **Consider** the use of **dopamine** if shock is unresponsive to fluids and epinephrine.





## ALTERED MENTAL STATUS

### I. MANAGEMENT

- A. **Immobilize** the entire **spine** if trauma is suspected.
- B. If the patient is not breathing adequately, **manage** the **airway** per the **Airway Management** protocols.
- C. **Defer intubation** until hypoglycemia and narcotic overdose have been ruled out as causes.
- D. If patient is breathing adequately, **administer O<sub>2</sub>**, 10-15 lpm by nonrebreather mask. Use a nasal cannula at 1-6 lpm if the patient is agitated by the mask.
- E. Place patient in a **semi-sitting position** (head elevated 30°).
- F. Ammonia inhalants are contraindicated.
- G. **Consider** administration of one tube of **instant glucose**, if the patient has a history of diabetes and is alert enough to swallow.
- H. Establish an **IV** of **normal saline TKO**.
- I. If signs and or symptoms of shock are present, **run the IV solution wide open, reassessing vital signs after every 250 ml**. Watch for signs of circulatory overload.
  - 1. Run the IV at TKO if signs and symptoms of shock resolve.
  - 2. For **children less than eight**, **place** an intraosseous catheter (**IO**) if IV access cannot be quickly obtained. Use **20ml/kg fluid boluses** in place of wide-open fluids. Reassess after every bolus and repeat PRN
- J. **Draw bloods** and perform **glucometry**.
- K. **If** the patient has a blood sugar (**BG**) reading **< 80 mg/dl**, administer **D50, 50 ml (25 grams), IVP**. If patient remains unconscious and BG < 80 mg/dl, repeat D50 25 gm once.
- L. If the patient is believed to be malnourished, follow dextrose administration with **thiamine, 100 mg, slow IVP**
- M. If unable to establish IV after two attempts and the patient is symptomatic, administer **Glucagon 1 mg IM**. If you suspect the patient is malnourished follow the glucagon with **Thiamine 100 mg IM**.
- N. If narcotic overdose is suspected, and the patient is unconscious and experiencing respiratory depression and/or hypotension, administer **naloxone, 0.4 to 2 mg, slow IVP or IM if no IV access**. Only administer enough naloxone to reverse respiratory depression and or hypotension.
- O. If the patient does not awaken after the above procedures, **consider** placement of **an advanced airway**.
- P. **Monitor ECG** lead II. If a dysrhythmia is seen refer to the dysrhythmia protocol.



## ASTHMA/COPD

### I. MANAGEMENT

- A. **Position patient** to ensure an open airway and maintain a position of comfort
- B. **Suction as needed.**
- C. If the patient is **not breathing adequately**, insert an **NPA or OPA** and assist breathing with a **bag-valve-mask**, supplied with 15 liters of O<sub>2</sub> or a flow restricted, O<sub>2</sub> powered ventilation device. Perform **endotracheal intubation as indicated** by the **Advanced Airway Management** protocol.
- D. If patient is **breathing adequately**, **administer O<sub>2</sub>**, 10-15 lpm by nonrebreather mask. Use a nasal cannula at 1-6 lpm if the patient is agitated by the mask.
- E. **Reassure patient.**
- F. **Search for causes.**
- G. Establish an **IV normal saline TKO** with a microdrip administration set. Draw bloods.
- H. **Monitor ECG** lead II.
- I. **Administer albuterol by MDI or 2.5 mg by nebulizer. Repeat PRN in 20 minutes for total of three doses.**
- J. If signs of bronchoconstriction remain, **consider nebulized ipatropium 0.5 mg in 2.5 ml of NS.**
- K. If signs of bronchoconstriction remain, **consider 0.3-0.5 ml epinephrine 1:1,000 SQ (use 0.01 mg/kg for pediatrics) or consider 0.3-0.5 mg epinephrine IV or SQ.**
- L. If signs of bronchoconstriction remain, **consider magnesium sulfate 2-4 g infused at 200 mg/min up to 1g/min.**
- M. If transport time is prolonged, consult medical control and anticipate **125 mg methylprednisolone IVP every 6 hours. (Use 1-2mg/kg initially then 2 mg/kg every 6 hours for pediatrics).**



## **BEHAVIORAL EMERGENCIES**

### **I. GENERAL POINTS**

- A. If suicide or violence is suspected, ask:
  - 1. Do you intend to hurt yourself or others?
  - 2. Have you had thoughts of killing yourself?
  - 3. Do you have a plan for killing yourself?
  - 4. Do you feel like life isn't worth living?
- B. If the answer is yes to any of the above questions, the patient should be encouraged to allow transportation to a medical facility for evaluation. If patient refuses, contact medical control. If medical control thinks the patient is a danger to self or others, law enforcement should be contacted. If unable to reach medical control, contact law enforcement.

### **II. MANAGEMENT**

- A. Allow patient to assume a **position of comfort**.
- B. **Treat hypoxia, shock, overdose and diabetes PRN.**
- C. Carefully assess the patient as tolerated for signs and symptoms of illness or injury.
- D. Uncooperative patients that are not competent to refuse treatment may be restrained. Contact law enforcement. Follow **Restraint** protocol as indicated.
- E. Treat injuries as patient allows.
- F. **If patient is out of control**, and must be restrained, **consider administration of 5 mg haloperidol IM**. Repeat once PRN in 5 minutes. Following this, also **administer 25 mg diphenhydramine IVP**.



## CARDIAC ARREST

### I. GENERAL MANAGEMENT

- A. Establish unresponsiveness.
- B. Determine lack of breathing AND pulse.
- C. Assure that the patient is supine on a firm surface.
- D. If not breathing, administer **positive pressure ventilation** at an age appropriate rate with 100% O<sub>2</sub>. Ensure a clear airway. Use **airway adjuncts**, and, if needed, **suction**.
- E. If no pulse, **apply AED** (see AED guidelines) **and start CPR**.
- F. **Assess for VF** or Pulseless VT. Use AED or Manual Defibrillator. If found, give three stacked shocks and then establish Airway and IV.
- G. **Place an endotracheal tube, dual lumen airway or laryngeal mask airway** per the **Advanced Airway Management** protocol.
- H. Establish **intravenous access normal saline TKO**.

### II. VENTRICULAR FIBRILLATION AND PULSELESS VENTRICULAR TACHYCARDIA

- A. One **precordial thump** may be delivered if the MICP witnessed the arrest and the defibrillator is not readily available.
- B. **Defibrillate at 200 joules**. If unsuccessful, immediately attempt a second defibrillation at **200-300 joules**. If unsuccessful, attempt a third immediate defibrillation at **360 joules**. Or use energy recommended by manufacturer of defibrillator.
- C. **Administer epinephrine, 1 mg IVP** (or 2.0-2.5 mg, ETT). Repeat every 3 minutes **or vasopressin 40 IU IVP**.
- D. **Defibrillate at 360 joules**, 30-60 seconds after every drug administration.
- E. **Administer an antiarrhythmic:**
  - 1. **lidocaine, 1-1.5 mg/kg, IVP** (or 2.0-3.75 mg/kg, ETT). Repeat in 3-5 minutes to a total of 3 mg/kg. If patient is older than 70 years old, has compromised liver function, administer a single loading dose of **1 mg/kg**
  - 2. **or; amiodarone 300 mg IVP**
  - 3. **or; procainamide 50 mg/min** to max dose of 17mg/kg
  - 4. **or; for known hypomagnesemia or torsades de pointes, magnesium sulfate 1-2 gm IVP** over 1-2 minutes.
- F. **Consider termination** of efforts.
- G. Transport.



III. PEDIATRIC VENTRICULAR FIBRILLATION AND PULSELESS VENTRICULAR TACHYCARDIA

- A. **Defibrillate at 2 joules/kg.** If unsuccessful, immediately attempt a second defibrillation at **4 joules/kg.** If unsuccessful, attempt a third immediate defibrillation at **4 joules/kg.**
- B. Administer **epinephrine, 0.1 ml/kg IVP of 1:10,000 IV/IO or 0.1ml/kg 1:1,000 ETT. Repeat IV/IO dose is 0.1ml/kg of 1:10,000** every 5 minutes.
- C. **Defibrillate at 4 joules/kg, 30-60 seconds after every drug administration.**
- D. Administer an antiarrhythmic:
  - 1. **lidocaine, 1 mg/kg, IVP (or 2.0-3.75 mg/kg, ETT).** Repeat in 3-5 minutes to a total of 3 mg/kg. If patient has compromised liver function, administer a single loading dose of **1 mg/kg**
  - 2. **or; amiodarone 5 mg/kg IVP.**
  - 3. **or; for known hypomagnesemia or torsades de pointes, magnesium sulfate 25-50 mg/kg up to 2 gm IVP.**
- E. **Consider termination** of efforts.
- F. Transport

IV. PULSELESS ELECTRICAL ACTIVITY (PEA)

- A. **Administer epinephrine, 1 mg (10 ml) IVP (or 2.0-2.5 mg, ETT).** Repeat administration every 3-5 minutes.
  - 1. For pediatrics, administer epinephrine, 0.1 ml/kg IVP of 1:10,000 IV/IO or 0.1ml/kg 1:1,000 ETT. Repeat IV/IO dose is 0.1ml/kg of 1:10,000 every 5 minutes.
- B. If adult and heart rate < 60/min. administer **atropine, 1 mg, IVP (or 2.0-2.5 mg, ETT).** Repeat every 3-5 minutes to total 0.03-0.04 mg/kg.
- C. Consider **running the IV of normal saline wide open**, unless the PEA is clearly from primary cardiac causes.
- D. Perform **differential diagnosis** of PEA to identify and **address treatable causes** of PEA
  - 1. Mechanical causes:
    - a) Poor CPR-**correct**
    - b) Tension Pneumothorax-**needle decompression**
    - c) Hypovolemia-**volume expansion**
    - d) Pericardial tamponade- **volume expansion, pericardiocentesis if delayed or prolonged transport.**
    - e) Massive Pulmonary embolism-**transport**
  - 2. Non-mechanical causes:
    - a) Hypoxia-**check interventions**
    - b) Metabolic Acidosis
      - (1) *preexisting-give 1mEq/kg sodium bicarbonate IVP*

- (2) *arrest generated-ventilate with 100% O<sub>2</sub>*
- c) Hypothermia-transport, **active rewarming**
- d) Drug overdose
  - (1) *tricyclic antidepressants-1mEq/kg sodium bicarbonate IVP*
  - (2) *beta blockers-increase dose of epinephrine to 10 mg IVP, administer glucagon 3-5 mg IVP.*
  - (3) *digitalis-transport*
  - (4) *calcium channel blockers-give 1,000 mg of calcium chloride slow IVP; administer glucagon 3-5 mg IVP.*
- e) Electrolyte imbalance
  - (1) *hyperkalemia-give sodium bicarbonate, and glucose*
  - (2) *hypocalcemia-give calcium chloride*

E. **Consider termination** of efforts.

F. Transport.

## V. ASYSTOLE

- A. **Consider external pacing.** Success unlikely, early if ever.
- B. **Administer epinephrine, 1 mg IVP** (or 2.0-2.5 mg, ETT). Repeat administration every 3-5 minutes.
  - 1. For pediatrics, administer epinephrine, 0.1 ml/kg IVP of 1:10,000 IV/IO or 0.1ml/kg 1:1,000 ETT. Repeat IV/IO dose is 0.1ml/kg of 1:10,000 every 5 minutes.
- C. For adults, **administer atropine, 1 mg, IVP** (or 2.0-2.5 mg, ETT). Repeat this dose after 3-5 minutes if no result. Total dose of 0.03-0.04 mg/kg.).
- D. **Consider termination** of efforts.
- E. Transport.

## VI. POST-ARREST

- A. If the patient was in VT/VF or significant premature ventricular complexes are present, **administer an IV infusion of the successful antiarrhythmic.**
  - 1. **lidocaine**
    - a) Administer a **lidocaine** infusion at **2-4 mg/min.**
      - (1) *Following the bolus given to maintain therapeutic levels of the medication or;*
      - (2) *alone if last bolus was given <15 minutes before termination of VF/VT.*
    - b) For pediatric post ventricular arrest administer lidocaine 20-50 µg/kg/minute infusion IV/IO.
    - c) If lidocaine was not previously given during the resuscitation, administer a bolus of **1 mg/kg, IVP** (or 2.0-3.75 mg/kg, ETT).

2. **or; procainamide 20-30 mg/min** (unless underlying heart function is impaired) until; arrhythmia resolves, hypotensive, QRS widens 50 % of its original width, or max dose of 17 mg/kg is administered. Start maintenance infusion at 1-4 mg/min if successful.
    - a) To give 20 mg/min. put 1 gm in 50 ml NS. Use a microdrip set and run at 60 gtts/min. To give 30 mg/min run at 90 gtts/min.
  3. **or; amiodarone 150 mg IV infusion over 10 minutes** followed by an infusion of 1mg/min for six hours then 0.5 mg/min over next 18 hours.
- B. **Check the patient's blood pressure. If BP is below 100mmHg, administer dopamine drip at 5 -15 µg/kg/min.** Titrate drip rate to systolic blood pressure >100 mmHg.
- C. If SVT or bradycardia is seen, follow that protocol.
- D. Transport.

## CHEST PAIN

### I. MANAGEMENT

- A. If the patient is not breathing adequately, **manage** the **airway** per the **Airway Management** protocols.
- B. If patient is breathing adequately, **administer O<sub>2</sub>**, 10-15 lpm by nonrebreather mask. Use a nasal cannula at 1-6 lpm if the patient is agitated by the mask.
- C. Let patient maintain a **position of comfort** if no trauma suspected
- D. **Administer aspirin 160-325 mg** by mouth
- E. **Start an IV NS TKO.**
- F. **If the patient is hypotensive with dry lungs and JVD, administer a 250cc fluid bolus and reassess.** Repeat as needed to maintain BP >100 systolic. If pulmonary edema develops, do not administer additional fluid boluses.
- G. **Monitor ECG lead II.** Follow appropriate protocol if dysrhythmia is seen.
- H. **Administer nitroglycerin 0.4 mg**, sublingually if the patient is not hypotensive (blood pressure > 90 mm Hg systolic).
  - 1. If the chest pain is not relieved, repeat administration of **nitroglycerin 0.4 mg**, sublingually every five minutes until chest pain is relieved. Recheck blood pressure after every dose.
  - 2. **Consider** using **nitroglycerin paste** if repeated doses of SL nitroglycerin are required for pain control. One inch is a starting dose.
- I. Recheck the patient's blood pressure. If the chest pain persists and the patient is not hypotensive, administer **morphine sulfate, 2-4 mg**, slow **IVP**, repeated after 5 minutes titrated to pain relief.
- J. Obtain a **12 lead EKG**.
- K. **Contact medical control.**
  - 1. **Consider labetalol 10 mg IVP** over 1-2 minutes.
  - 2. **Consider enoxaparin 1 mg/kg.**
- L. Out of hospital fibrinolysis may be appropriate for services with greater than a 60 minute transport time. A bolus dose agent should be used.



## DIABETES

### I. MANAGEMENT

- A. If the patient is not breathing adequately, **manage** the **airway** per the **Airway Management** protocols.
  - 1. **Defer intubation** until hypoglycemia has been ruled out or corrected.
- B. If patient is breathing adequately, **administer O<sub>2</sub>**, 10-15 lpm by nonrebreather mask. Use a nasal cannula at 1-6 lpm if the patient is agitated by the mask.
- C. Allow patient to assume a **position of comfort**.
- D. If hypoglycemia is suspected and the patient is alert enough to swallow, **administer one tube of oral glucose**.
- E. Establish an **IV** of **normal saline TKO**
  - 1. Suspect dehydration in hyperglycemic patients. Run the IV wide open, reassessing vital signs after each 250 ml.
- F. **Draw bloods** and perform **glucometry**. If the patient has a blood sugar (**BG**) reading < **80 mg/dl** **administer D<sub>50</sub>W, 50 ml (25 grams), IVP**. If blood sugar remains low and signs and symptoms continue, repeat the above steps once.
  - 1. For **pediatric patients**, administer **25% dextrose, 2-4 ml/kg IV**. For the patient with high blood sugar and signs of shock, give a 20 ml/kg IV bolus of NS.
- G. Follow dextrose administration with **thiamine, 100 mg**, slow **IVP** if the patient is believed to be malnourished.
- H. If **unable to establish IV** after two attempts and the patient is symptomatic, **administer Glucagon 1 mg IM**. If patient is malnourished, precede the glucagon with **Thiamine 100 mg IM**.
- I. If the patient does not awaken after the above procedures, **consider** placement of an **endotracheal tube** (with rapid sequence intubation if the patient cannot be intubated otherwise).
- J. **Monitor ECG** lead II. If a dysrhythmia is seen, refer to **Dysrhythmia** protocol.
- K. **Consider** placing a **foley catheter** if the transport is delayed.



## DYSRHYTHMIAS

### I. GENERAL MANAGEMENT

- A. **Calm the patient** and provide continual reassurance.
- B. If the patient is not breathing adequately, **manage** the **airway** per the **Airway Management** protocol.
- C. If patient is breathing adequately, **administer O<sub>2</sub>**, 10-15 lpm by nonrebreather mask. Use a nasal cannula at 1-6 lpm if the patient is agitated by the mask.
- D. **Position patient** in the most comfortable position.
- E. Place an **IV NS TKO**. Use a microdrip administration set. Draw bloods.

### II. BRADYCARDIA

- A. **If asymptomatic, observe and transport.**
- B. If patient is bradycardic and does not have a 2° type II or 3° heart block, **administer atropine, 0.5-1.0 mg, IVP**. Repeat every 3-5 minutes to a maximum 0.03-0.04 mg/kg.
- C. Initiate **transcutaneous pacing (TCP)**. TCP may be administered as soon as available and may precede atropine.
  - 1. The patient may be sedated. Use **diazepam 2-5 mg** slow **IVP** titrated to relief of anxiety up to max of 10 mg **or** use **midazolam 1-2 mg** slow **IVP** titrated to relief of anxiety up to max of 5 mg.
- D. If TCP is unsuccessful, start **dopamine infusion at 5-20 µg/kg/min**. Titrate to systolic BP >90 mm Hg.
- E. If all other interventions are unsuccessful, start **epinephrine infusion at 2-10 µg/min**. Titrate to achieve a pulse rate 60-80 BPM.
- F. Transport.

### III. PEDIATRIC BRADYCARDIA

- A. Bradycardia in children up to age 8 is often a sign of **hypoxia**. **Ensure the child is well oxygenated** before any other treatment.
- B. If heart rate is **less than 60 bpm** and child has poor perfusion **start chest compressions**.
- C. **Administer epinephrine 0.1 ml/kg 1:10,000 IV/IO push**. Repeat every 3-5 min PRN.
- D. **Consider atropine 0.02 mg/kg IV/IO push** if epinephrine is not effective. Repeat once PRN. Max single dose 0.5 mg. Minimum dose 0.1 mg.
- E. **Consider external pacing**.
- F. Transport.

### IV. PEDIATRIC TACHYCARDIA

- A. **Narrow QRS** (less than or equal to 0.08 sec)
  - 1. **If patient is asymptomatic, observe and transport.**



2. **Determine** if sinus tachycardia (ST) or supraventricular tachycardia (SVT). Treat ST by addressing the causes. Treat SVT as listed below.
  3. **SVT Adequate perfusion**
    - a) **Attempt vagal maneuvers.**
      - (1) *Valsalva*
      - (2) *Immerse face in ice water.*
    - b) **Administer adenosine, 0.1mg/kg, rapid IV push** (over 1-3 sec) immediately followed with a 5 ml IV solution flush. If no conversion after 1-2 minutes, **repeat with 0.2 mg/kg rapid IV push**
    - c) Transport.
  4. **SVT Inadequate perfusion**
    - a) If an IV/IO is in place give adenosine as above.
    - b) Deliver **synchronized cardioversion at 0.5 joules/kg**. Do not delay cardioversion to start IV/IO or sedate the patient. **Repeat at 1.0 and then 2.0 joules/kg** if unsuccessful. If unsuccessful, reconsider diagnosis of SVT.
      - (1) *If an IV is already in place and it will not cause a significant delay, the patient may be sedated as needed. Contact medical control for orders.*
    - c) Transport.
- B. **Wide QRS** (>0.08 sec) assume Ventricular Tachycardia (VT)
1. If patient is **asymptomatic**, observe and transport.
  2. **Adequate perfusion**
    - a) **Consult medical control.**
    - b) **Consider an antiarrhythmic:**
      - (1) ***lidocaine 1mg/kg IV/IO push. Repeat in 5 min. PRN up to max dose of 3 mg/kg. If successful, start lidocaine infusion at 20-50 µg/kg/min;***
        - (a) *To mix, multiply 60 x body weight in kg this is mg to add to 100 ml bag of NS and remove from bag to make total of 100 ml. 1 ml/hour gives 10 µg/min*
      - (2) ***or; amiodarone 5 mg/kg IV infusion over 30 to 60 minutes.***
      - (3) ***or; procainamide 15 mg/kg over 15-30 minutes.***
    - c) Transport.
  3. **Inadequate perfusion**
    - a) **Deliver synchronized cardioversion at 0.5 joules/kg**. Do not delay. If unsuccessful, **repeat at 1.0 then 2.0 joules/kg PRN**.
    - b) Transport.

V. PREMATURE VENTRICULAR COMPLEXES (PVC'S)

- A. **If patient is asymptomatic, observe and transport.**
- B. If the patient is bradycardic, increase the rate per the bradycardia section.
- C. **Ensure the patient is well oxygenated and that cardiac chest pain has been relieved.**
- D. **Consult with medical control.**
- E. Transport.

VI. SUPRAVENTRICULAR TACHYCARDIA (SVT)

- A. **If patient is asymptomatic, observe and transport.**
- B. **Stable Patient**
  - 1. Perform Valsalva maneuver or **carotid massage**.
  - 2. If unsuccessful, **administer adenosine, 6 mg rapid IVP**, immediately followed with a 20 ml IV solution flush. If no conversion after 1-2 minutes, **repeat with 12 mg**. May **repeat** again at **12 mg** after 1-2 minutes.
  - 3. If SVT persists, **consult with medical control** and **consider**;
    - a) synchronized cardioversion, beta-blockers, calcium channel blockers, or digoxin.
  - 4. Transport.
- C. **Unstable Patient**
  - 1. Deliver **synchronized cardioversion at 50 joules; increase dose PRN to 100 joules then 200 joules; 300 joules; 360 joules**. Do not delay.
  - 2. Transport.

VII. WIDE COMPLEX TACHYCARDIA-UNCERTAIN TYPE (WCT)

- A. **Stable Patient**
  - 1. **Consult medical control.**
    - a) **Consider procainamide 20-30 mg/min** (unless underlying heart function is impaired) until; arrhythmia resolves, hypotensive, QRS widens 50 % of its original width, or max dose of 17 mg/kg is administered. Start maintenance infusion at 1-4 mg/min if successful.  
*(1) To give 20 mg/min. put 1 gm in 50 ml NS. Use a microdrip set and run at 60 gtts/min. To give 30 mg/min run at 90 gtts/min.*
    - b) **or; consider amiodarone 150 mg IV infusion over 10 minutes** followed by an infusion of 1mg/min for six hours then 0.5 mg/min over next 18 hours.
  - 2. Transport.
- B. **Unstable patient**
  - 1. Deliver **synchronized cardioversion at 100 joules; increase dose PRN to 200 joules then 300 joules; then 360 joules**. Do not delay.
  - 2. **Consider an antiarrhythmic** after successful cardioversion.

3. Transport.

#### VIII. VENTRICULAR TACHYCARDIA WITH A PULSE

##### A. **Stable Patient**

1. **Consult medical control.**

- a) **Consider lidocaine, 1.0-1.5 mg/kg, IVP.** If VT persists, repeat lidocaine at half the initial dose (0.5-0.75 mg/kg) every 2-10 minutes until 3 mg/kg total has been administered. Following the successful lidocaine bolus, administer a lidocaine infusion at 1-4 mg/min.
- b) **Or; consider procainamide 20-30 mg/min** (unless underlying heart function is impaired) until; arrhythmia resolves, hypotensive, QRS widens 50 % of its original width, or max dose of 17 mg/kg is administered. Start maintenance infusion at 1-4 mg/min if successful.  
*(1) To give 20 mg/min. put 1 gm in 50 ml NS. Use a microdrip set and run at 60 gtts/min. To give 30 mg/min run at 90 gtts/min.*
- c) **Or: consider amiodarone 150 mg IV infusion over 10 minutes** followed by an infusion of 1 mg/min for six hours then 0.5 mg/min over next 18 hours.
- d) **Or; if polymorphic, consider magnesium sulfate 1-2 g/100 ml D<sub>5</sub>W infused over 5- 60 min.** Follow this with 0.5-1.0 g/hour

2. Transport.

##### B. **Unstable patient**

1. Deliver **synchronized cardioversion at 100 joules; increase dose PRN to 200 joules then 300 joules; then 360 joules.** Do not delay.
2. **Consider antiarrhythmic** after successful cardioversion.
3. Transport.

## GASTROINTESTINAL BLEEDING

### I. MANAGEMENT

- A. If the patient is not breathing adequately, **manage** the **airway** per the **Airway Management** protocols.
- B. If patient is breathing adequately, **administer O<sub>2</sub>**, 10-15 lpm by nonrebreather mask. Use a nasal cannula at 1-6 lpm if the patient is agitated by the mask.
- C. **Position patient** to satisfy physiological needs.
- D. **Treat shock.**
- E. Establish one or two IVs **of normal saline or ringer's lactate.**
- F. If signs and or symptoms of shock are present, **run the IV solution wide open, reassessing vital signs after every 250 ml.**
- G. **Monitor ECG** lead II.
- H. Consider placement of a **nasogastric tube** if the transport time is prolonged. This may be contraindicated in upper GI bleed particularly if history of alcohol abuse.



## **HYPERTENSION**

### **I. MANAGEMENT**

- A. If the patient is not breathing adequately, **manage** the **airway** per the **Airway Management** protocols.
- B. If patient is breathing adequately, **administer O<sub>2</sub>**, 10-15 lpm by nonrebreather mask. Use a nasal cannula at 1-6 lpm if the patient is agitated by the mask.
- C. Position patient in **most comfortable position**. Elevate head 30° if the diastolic pressure is over 120 mm Hg or if there is evidence of neurologic deficit.
- D. Place an **IV NS TKO**. Use a microdrip administration set. Draw bloods.
- E. **Monitor ECG** lead II.
- F. **Contact medical control** before administering any medication (aside from O<sub>2</sub>) to hypertensive patients.
- G. If evidence of new neurologic impairment is present or cardiac impairment and the blood pressure is significantly elevated, medical may order:
  - 1. **Anticipate** an order for **labetolol 10 mg IVP** over 1-2 minutes.



## **HYPERVENTILATION**

### **I. MANAGEMENT**

- A. The commonly used "**brown bag**" **treatment is not acceptable** for this condition as it may result in hypoxia.
- B. If patient is breathing adequately, **administer O<sub>2</sub>**, 10-15 lpm by nonrebreather mask. Use a nasal cannula at 1-6 lpm if the patient is agitated by the mask.
  - 1. **O<sub>2</sub> should not be withheld.**
- C. If the patient is not breathing adequately, **manage** the **airway** per the **Airway Management** protocols.
- D. **Calm and reassure** the patient. Coached breathing may reduce the respiratory rate and reduce anxiety.
- E. Follow the **Asthma/COPD** protocol as needed.
- F. Check blood sugar and treat as indicated by the Diabetes protocol.





## NEONATAL RESUSCITATION

### I. MANAGEMENT

- A. **If thick meconium** was noted at delivery, **and infant is depressed, intubate and suction** trachea, mouth and airway using endotracheal tube with meconium aspirator **prior to stimulation**. Repeated suctioning may be necessary to clear trachea.
- B. Position the baby with head slightly down, **suction mouth then nose, dry and warm the baby**.
- C. **Reassess**
- D. **If centrally cyanotic, administer 100% oxygen by mask.**
- E. **Reassess.**
- F. **If gasping, apnea, persistent central cyanosis or pulse < 100, assist ventilation** with a BVM and 100% O<sub>2</sub> at a rate of 40/minute.
  - 1. If **prolonged ventilation** is required, **intubate** the patient with an appropriate-sized ET Tube.
- G. Assess **heart rate**. Palpate brachial pulse or the base of the umbilical cord. **If HR is <60** begin **chest compressions**, and rapidly transport.
- H. **If HR > 100**, and baby is pink or blue in hands and feet, **keep warm and transport**.
- I. If **heart rate** remains **below 60 after chest compressions**, **administer 0.1 ml/kg epinephrine 1:10,000 IVP**. Repeat every 3-5 minutes as needed.
- J. Consider placement of an umbilical catheter if medications or fluids are immediately indicated.



## OBSTETRIC/GYNECOLOGIC

### I. GENERAL MANAGEMENT

- A. If the patient is not breathing adequately, **manage the airway** per the **Airway Management** protocols.
- B. If patient is breathing adequately, **administer O<sub>2</sub>**, 10-15 lpm by nonrebreather mask. Use a nasal cannula at 1-6 lpm if the patient is agitated by the mask.
- C. **Position patient** in most comfortable position. If the patient is >6 months pregnant, place patient in the left lateral recumbent position.
- D. Establish one or two IVs **of normal saline**. Use a macrodrip administration set. Draw bloods if time allows.
- E. If signs and or symptoms of shock are present, **run the IV solution wide open, reassessing vital signs after every 250 ml.**
- F. **Monitor ECG** lead II. Refer to the appropriate protocol if a dysrhythmia is seen.
- G. If suspected **ectopic pregnancy** follow **Vaginal Bleeding** protocol.

### II. IMMINENT DELIVERY:

- A. **Prepare the area.**
- B. **Deliver the baby.**
  - 1. Coach the mother to bear down with contractions.
  - 2. Control the delivery of the head with gentle pressure.
  - 3. Remove the membranes, if they are intact.
  - 4. Check for the cord around the neck and gently slip it over the head if possible. If it is too tight, clamp and cut it.
  - 5. Suction the baby's airway; mouth first, then nose.
  - 6. Deliver the shoulders; anterior then posterior.
  - 7. The rest of the body will deliver rapidly after the shoulders.
  - 8. Support the child at the level of the vagina.
  - 9. Suction the airway again.
  - 10. Be careful not to drop the baby, they are very slippery.
  - 11. Clamp the cord 8 and 10 inches from the baby and cut it between the clamps. Ties may be used if clamps are unavailable.
- C. **Perform neonatal resuscitation.**
  - 1. Drying, warming, positioning, suctioning, tactile stimulation.
  - 2. Follow the **Neonatal Resuscitation** protocol.
- D. Do not wait on scene to deliver the placenta. If the patient is expecting twins, transport between deliveries if possible.
- E. If there is an **abnormal presentation**, contact medical control.

1. Breech; Deliver the body. DO NOT PULL ON THE BABY. If head will not deliver, insert gloved hand into vagina, form “V” with fingers to create an airway around the mouth and nose. Transport immediately maintaining airway en route.
2. Transport immediately for all other abnormal presentations unless otherwise directed by on-line medical control.

III. PROLAPSED UMBILICAL CORD:

- A. Insert gloved fingers into vagina and relieve pressure on cord.
- B. Do not attempt to push cord back into place.
- C. Transport immediately.

IV. POST PARTUM HEMORRHAGE

- A. **Control postpartum bleeding** by massage of the uterine fundus. Nursing can also help control postpartum bleeding.
- B. To **control post-partum hemorrhage** after placental delivery- **consider oxytocin, 10 units in one liter of normal saline run wide open**. Ensure external uterine massage has been attempted prior to using oxytocin.

V. SEIZURE

- A. **If the patient is seizing in third trimester and does not have a history of seizures, administer 2 gm magnesium sulfate IVP.** Repeat 2 gm PRN after 5 minutes. If unsuccessful, administer diazepam 5-10 mg intravenous push to control seizures.

## OBSTRUCTED AIRWAY

### I. MANAGEMENT-ADEQUATE AIR EXCHANGE

- A. **Do not interfere** with the patient's attempts to relieve the obstruction, including coughing and breathing.
- B. If patient is a child leave in caregiver's arms. Do not attempt to view airway or perform any procedure that will agitate child.
- C. **Apply 100% O<sub>2</sub>** via non-rebreather mask as tolerated.
- D. Transport. Allow patient to travel in position preferred.

### II. MANAGEMENT-POOR AIR EXCHANGE

- A. **Suction** the patient to remove any obstructing secretions or fluids.
- B. If **foreign body** is suspected,
  - 1. **Perform abdominal thrusts.** Use chest thrusts if the victim is very obese or in the late stages or pregnancy.
  - 2. Open the patient's mouth and **perform finger sweep.** Do not perform blind sweeps in children.
  - 3. If unconscious, perform **head tilt-chin lift.**
  - 4. **Attempt ventilation** by bag-valve-mask.
  - 5. **Repeat** steps 1-5 until adequate ventilation is established or laryngoscope is available.
  - 6. Use laryngoscope and Magill forceps to **view and remove** foreign body obstruction.
- C. **Assist ventilation** with bag-valve-mask attached to 100% O<sub>2</sub>.
- D. **Consider endotracheal intubation.**
  - 1. If the cause is swelling, this procedure will be very difficult and should be performed by the most experienced team member. Use ET tube smaller than usual.
  - 2. **If patient is totally obstructed after intubation, advance tube deeply** in an attempt to push foreign body into right mainstem bronchus.
- E. **If unable to intubate and ventilate** adequately;
  - 1. In adults, perform **surgical cricothyrotomy** and insert ET tube or tracheostomy tube in to trachea.
  - 2. **Needle cricothyrotomy** should be used **for children.**
  - 3. **Ventilate** through surgical airway.
- F. Transport



## POISONING/OVERDOSE

### I. MANAGEMENT

- A. Conduct **scene size-up**. Call for hazardous materials assistance if needed.
- B. If more than one patient presents with signs and symptoms of poisoning consider this event as a possible public health emergency and make appropriate notifications.
- C. If the patient is not breathing adequately, **manage** the **airway** per the **Airway Management** protocols.
- D. If patient is breathing adequately, **administer O<sub>2</sub>**, 10-15 lpm by nonrebreather mask. Use a nasal cannula at 1-6 lpm if the patient is agitated by the mask.
- E. **Contact medical control** and **Poison Control**: 1 800-222-1222.
- F. If unable to contact poison control and the patient ingested poison, and the **transport time** to a medical facility is **greater than 15 minutes**, **administer Activated Charcoal 1 gm/kg PO or NG**.
- G. Establish one or two IVs **of normal saline**. Use a macrodrip administration set. Draw bloods if time allows.
- H. If signs and or symptoms of shock are present, **run the IV solution wide open, reassessing vital signs after every 250 ml**.
- I. **If narcotic overdose** is suspected and the patient is unconscious and experiencing respiratory depression and/or hypotension, **administer naloxone, 0.4 to 2 mg, slow IVP or IM if no IV access**. Only administer enough naloxone to reverse respiratory depression and or hypotension.
- J. **Monitor ECG** lead II.
- K. **Consider** placing a large bore gastric tube and **evacuating gastric contents** if the ingestion was within 1-2 hours of patient presentation.
- L. **If it is known that the patient was exposed to an organophosphate poison;**
  - 1. **administer atropine 2-5 mg every 10-15 minutes.**
  - 2. **administer pralidoxime (2-PAM) 1-2 gm over 30 minutes.**
- M. **If the patient is known to have overdosed on a tri-cyclic antidepressant**, and is experiencing hypotension and/or cardiac dysrhythmias, **administer 1-2 mEq/kg sodium bicarbonate**.
- N. **If cyanide poisoning**, **administer contents of cyanide antidote kit** following directions in kit.
- O. **Consult medical control** for other specific treatment orders for poisoning.





## **PULMONARY EDEMA**

### **I. MANAGEMENT**

- A. **Position patient** with extremities dependent.
- B. If the patient is not breathing adequately, **manage** the **airway** per the **Airway Management** protocols.
- C. If patient is breathing adequately, **administer O<sub>2</sub>**, 10-15 lpm by nonrebreather mask. Use a nasal cannula at 1-6 lpm if the patient is agitated by the mask.
- D. **Reassure patient.**
- E. Establish an **IV of normal saline TKO**. Use a microdrip administration set. Draw bloods if time allows. Carefully monitor flow rate.
- F. **Monitor ECG** lead II.
- G. **Administer nitroglycerin, 0.4 mg, SL**. Administer nitroglycerin every three to five minutes as long as systolic blood pressure is above 100 and symptoms continue.
  - 1. 1 inch of **nitroglycerin paste** may be used after the initial SL dose.
- H. **Administer morphine sulfate, 2-5 mg, IVP** (if the patient is not hypotensive).
- I. **Administer furosemide, 20-80 mg, IVP** (if the patient is not hypotensive). If patient's oral lasix dose is known, double the dose, IVP.
- J. **Consider** placing a **foley catheter** if the transport time is longer than 30 minutes.
- K. Transport



## SEIZURES

### I. IF THE PATIENT IS ACTIVELY SEIZING OR IS POSTICTAL:

- A. Try to **prevent injuries** from the motion of seizure.
- B. **Insert a nasopharyngeal airway.**
- C. **Maintain the airway, suction** if necessary.
- D. **If patient is hypoxic** assist breathing with a **bag-valve-mask**, supplied with 15 liters of O<sub>2</sub> or a FROPVD.
- E. If patient is **breathing adequately**, **give O<sub>2</sub>**, 10-15 lpm by nonrebreather mask. Use a nasal cannula at 1-6 lpm if the patient is agitated by the mask.
- F. Start an **IV NS TKO.**
  - 1. For children, consult medical control and consider IO access if patient has status seizures and IV access cannot be obtained.
- G. **Monitor ECG lead II.** If a dysrhythmia is seen, refer to the appropriate dysrhythmia protocol.
- H. **Rule out treatable causes:**
  - 1. Draw bloods and perform glucometry. **If the patient has a blood sugar (BG) reading < 80 mg/dl, administer D<sub>50</sub>W, 50 ml (25 grams), IVP.**
    - a) If the patient is believed to be malnourished, follow dextrose administration with thiamine, 100 mg slow IVP.
  - 2. **If narcotic overdose** is suspected and the patient is unconscious and experiencing respiratory depression and/or hypotension, **administer naloxone, 0.4 to 2 mg, slow IVP or IM if no IV access.** Only administer enough naloxone to reverse respiratory depression and or hypotension.
- I. **Control Seizure:**
  - 1. **For adults:** If seizure lasts for more than 5 minutes (as described by credible witnesses), administer **diazepam 2-10 mg** slow **IVP** titrated to seizure cessation **or use midazolam 1-2 mg IM or slow IVP** titrated up to 5 mg to seizure cessation.
  - 2. **For children:** If seizure lasts for more than 5 minutes (as described by credible witnesses), **administer diazepam 0.2-0.5 mg/kg IV, IO, or rectal**, titrated to cessation of seizures.
  - 3. **Consider fosphenytoin** 10-20 PE/kg IV. For adults, maximum administration rate 50 PE/min. For children, maximum administration rate 1-2 PE/kg/min.
- J. If the patient is **unable to maintain airway**, **consider** placement of an **endotracheal tube** (with rapid sequence intubation if the patient cannot be intubated otherwise).

### II. IF THE PATIENT IS NOT SEIZING AND IS NOT POSTICTAL:

- A. **Administer O<sub>2</sub>** 10-15 lpm by nonrebreather mask if the patient is symptomatic.
- B. **Calm the patient** and provide continual reassurance.

- C. **Position patient** in most comfortable position. Sitting upright - if normotensive or having trouble breathing. On side-if actively seizing. Supine - if airway management is needed.
- D. Get an **accurate description** of the seizure type, duration, etc. Obtain a history from the patient, family, or other witness (part of body seizure started in, jerking of extremities, eyes deviated, mental status, urinary incontinence). Determine if there is a history of other significant medical conditions.
- E. Do **head-to-toe examination**. Examine head and neck; look for trauma, examine pupils, look in oropharynx for injuries. Assess for incontinence of bladder and/or bowel. Examine extremities and look for obvious motor deficits.

## STROKE

### I. MANAGEMENT

- A. If trauma is suspected, **immobilize the spine** according to the **Spinal Immobilization** protocol
- B. If the patient is not breathing adequately, **manage** the **airway** per the **Airway Management** protocols.
- C. If patient is breathing adequately, give **supplemental O<sub>2</sub>** as needed to maintain SpO<sub>2</sub> greater than 95%. If SpO<sub>2</sub> monitoring is not available, administer O<sub>2</sub>, 10-15 lpm by nonrebreather mask. Use a nasal cannula at 1-6 lpm if the patient is agitated by the mask.
- D. **Position with head elevated 30°.**
- E. **While en route** to hospital, establish an **IV NS TKO**. Use a microdrip administration set. Draw blood.
- F. **Check blood glucose.**
- G. **While en route, monitor ECG lead II.**
- H. Provide supportive care according to the appropriate protocol.



## VAGINAL BLEEDING

### I. MANAGEMENT

- A. If the patient is not breathing adequately, **manage** the **airway** per the **Airway Management** protocols.
- B. If patient is breathing adequately, and is **symptomatic** of shock, administer high flow O<sub>2</sub>, **10-15 liters by nonrebreather** if patient can tolerate mask.
- C. If patient is breathing adequately, is **asymptomatic**, and SpO<sub>2</sub> >95% administer O<sub>2</sub>, **at 2-6 liters by nasal cannula**.
- D. **Control external bleeding with direct pressure.**
- E. **Position patient.**
- F. **Conduct focused history and physical examination.**
  - 1. Determine last menstrual period. Assess for bleeding or discharge. Question for urinary symptoms, (frequency, pain, changes in color or odor).
  - 2. If patient is known to be pregnant, determine; due date, gravidity (number of pregnancies) and parity (number of live births), if membranes ruptured, drug use, possibility of multiple births, meconium staining, bleeding or spotting
  - 3. Palpate abdomen. Assess for guarding, distension, masses, and tenderness.
- G. Package any clots or tissues passed with bleeding in biohazard bag and transport to hospital with patient.
- H. **Transport** to hospital promptly.
- I. Establish **one or two IVs of normal saline or ringer's lactate**. Use a macrodrip administration set. Draw bloods if time allows.
- J. If signs and or symptoms of shock are present, **run the IV solution wide open, reassessing vital signs after every 250 ml.**
- K. **Monitor ECG** lead II. Refer to the appropriate protocol if a dysrhythmia is seen.





# TRAUMA



## MAJOR TRAUMA

### I. MANAGEMENT

- A. In trauma cardiopulmonary arrest, consider terminating or withholding resuscitation according to the **Death in the Field** protocol.
- B. **Stabilize** patient's **spine** in a neutral, in-line position as indicated in the **Spinal Immobilization** protocol.
- C. **Calm the patient** and provide continual reassurance.
- D. If the patient is not breathing adequately, **manage** the **airway** per the **Airway Management** protocols.
- E. If the **patient is breathing adequately** but has experienced serious trauma, administer **high flow O<sub>2</sub>, 10-15 liters** (85-100 percent) **by nonrebreather**. If the patient has experienced minor to moderate trauma, O<sub>2</sub> should be provided at levels dictated by the **Pulse Oximetry Protocol**.
- F. Perform **management of chest wounds**:
  - 1. If **open chest wound** is present, dress with an **occlusive dressing** such as petroleum gauze secured on three sides, leaving one edge of dressing open.
  - 2. If **flail chest** is present with respiratory insufficiency, **assist** the patient's **breathing** with a bag-valve-mask device.
  - 3. If tension pneumothorax, perform **chest decompression**.
- G. **Control hemorrhage**.
- H. **Stabilize impaled objects** and do not remove unless the object is obstructing the airway or patient cannot be safely transported with the object in place.
- I. **Keep victim warm**.
- J. Apply **C-collar and backboard**.
- K. **Transport**
- L. Follow appropriate protocol for specific injuries.
- M. Establish **one or two IVs of normal saline or ringer's lactate**. Use a macrodrip administration set. Draw bloods if time allows.
- N. If signs and or symptoms of shock are present, **run the IV solution wide open, reassessing vital signs after every 250 ml**.
  - 1. For **children less than eight**, **place** an intraosseous catheter (**IO**) if IV access cannot be quickly obtained. Use **20ml/kg fluid boluses** in place of wide-open fluids. Reassess after every bolus and repeat PRN
  - 2. If the patient has an **uncontrollable hemorrhage** (e.g. internal bleeding), fluid resuscitate to and maintain a **systolic blood pressure of 90 mmHg**.
  - 3. If **hemorrhage is controllable**, resuscitate to **normal vital signs**.
- O. **While en route, Monitor ECG lead II**.
- P. If transport is delayed consider placing a nasogastric tube (orogastric if contraindicated) and foley catheter.



## ABDOMINAL TRAUMA

### I. MANAGEMENT

- A. **Follow Major Trauma protocol as indicated.**
- B. If the patient is not breathing adequately, **manage** the **airway** per the **Airway Management** protocols.
- C. If patient is breathing adequately, **administer O<sub>2</sub>**, 10-15 lpm by nonrebreather mask. Use a nasal cannula at 1-6 lpm if the patient is agitated by the mask.
- D. **Control external bleeding** and cover any open wounds with sterile dressings
- E. **Cover protruding organs** with moist gauze. Do not attempt to replace protruding organs. Apply a vapor barrier to hold in moisture and heat.
- F. **Stabilize impaled objects** penetrating the abdominal wall. Do not remove unless transport is not practical with the object in place.
- G. Establish **one or two IVs of normal saline or ringer's lactate**. Use a macrodrip administration set. Draw bloods if time allows.
  - 1. If signs and or symptoms of shock are present, **run the IV solution wide open, reassessing vital signs after every 250 ml.**
  - 2. For **children less than eight**, **place** an intraosseous catheter (**IO**) if IV access cannot be quickly obtained. Use **20ml/kg fluid boluses** in place of wide-open fluids. Reassess after every bolus and repeat PRN
- H. **Monitor ECG** lead II.
- I. Consult medical control and consider placing a nasogastric tube and foley catheter.



## CHEST TRAUMA

### I. MANAGEMENT

- A. **Follow Major Trauma protocol as indicated.**
- B. Avoid transporting patient on injured side.
- C. If the patient is not breathing adequately, **manage the airway** per the **Airway Management** protocols.
- D. If the **patient is breathing adequately** but has experienced serious trauma, administer **high flow O<sub>2</sub>, 10-15 liters** (85-100 percent) **by nonrebreather**. If the patient has experienced minor to moderate trauma, O<sub>2</sub> should be provided at levels dictated by the **Pulse Oximetry Protocol**.
- E. **Flail chest**
  - 1. As needed, using rapid sequence intubation if needed, **place an endotracheal tube and assist ventilation with positive pressure O<sub>2</sub>**.
  - 2. Little can be done to stabilize a flail section in the field. Efforts should be focused on resuscitation and transport.
- F. **Open chest wounds**
  - 1. Cover with an **occlusive dressing** taped on three sides.
  - 2. Observe closely for signs of developing tension pneumothorax.
- G. **Tension pneumothorax**
  - 1. **Decompress chest** with large bore needle in midclavicular second intercostal space in affected side(s).
  - 2. Assist ventilation with positive pressure O<sub>2</sub> if necessary.
- H. **Cardiac tamponade** or contusion
  - 1. **Consult medical control** about pericardiocentesis.
- I. Establish **one or two IVs of normal saline or ringer's lactate**. Use a macrodrip administration set. Draw bloods if time allows.
- J. If signs and or symptoms of shock are present, **run the IV solution wide open, reassessing vital signs after every 250 ml**.
  - 1. For **children less than eight**, **place** an intraosseous catheter (**IO**) if IV access cannot be quickly obtained. Use **20ml/kg fluid boluses** in place of wide-open fluids. Reassess after every bolus and repeat PRN
  - 2. If the patient has **shock**, **IVs** should be **started en route** to the receiving facility.
  - 3. If the patient has an **uncontrollable hemorrhage** (e.g. internal bleeding), fluid resuscitate to and maintain a **systolic blood pressure of 90 mmHg**.
  - 4. If **hemorrhage is controllable**, resuscitate to **normal vital signs**.
- K. **Monitor ECG lead II**. If a dysrhythmia is seen, refer to the appropriate dysrhythmia protocol.



- L. If the patient is experiencing **significant pain**, **contact medical control** and **consider** administering **morphine sulfate 2-5 mg** slow IVP titrated to pain relief. May repeat PRN up to max of 10 mg.

## DISLOCATIONS-DELAYED TRANSPORT

### I. GENERAL TREATMENT

- A. This protocol is to be used only by those who have taken specialized training in these procedures e.g. a Wilderness EMT course and are authorized by medical control.
- B. Medical control should be consulted if possible.
- C. An attempt to reduce a simple dislocation into anatomical position should be made if transport time is delayed or prolonged greater than two hours, even if distal circulation is normal.
- D. Check circulation and nerve function before and after any manipulation of an injured bone or joint.
- E. Discontinue an attempt at reduction if pain is significantly increased by manipulation; or resistance to movement is encountered.
  - 1. In these cases, the joint should be immobilized as comfortably as possible in the position of injury for transport.
- F. If trained and authorized, before attempting to reduce a dislocation, consider **morphine sulfate 2-5 mg** slow IVP titrated to pain relief. May repeat PRN up to max of 10 mg. Also, administer **diazepam 2-5 mg** slow **IVP** titrated to relief of anxiety up to max of 10 mg **or** use **midazolam 1-2 mg** slow **IVP** titrated to relief of anxiety up to max of 5 mg. Watch respiratory drive carefully and be prepared to reverse agents and/or assist ventilations as needed.

### II. SHOULDER

- A. Traction and External Rotation
  - 1. Apply gentle and steady traction along the axis of the humerus. If done correctly, this should cause a significant reduction in pain.
  - 2. While maintaining gentle steady traction, guide the patient into a comfortable supine position.
  - 3. Guide the arm first into a position of about 90 degrees abduction, and then into a position of full external rotation (i.e., "throwing a baseball"). Maintain gentle and steady traction during this movement.
  - 4. Positioning of the arm should cause no significant increase in pain, and will generally reduce pain if done correctly. Movement must be gradual and slow.
  - 5. When the position of 90 degrees abduction and full external rotation has been attained ("throwing a baseball"), hold the arm in that position and maintain light, gentle and steady traction to relieve muscle spasm.
  - 6. When the joint is in the correct position and muscle spasm is effectively relieved, the dislocation will generally reduce spontaneously within 15 minutes. Both the patient and the rescuer usually will feel joint reduction.
  - 7. If reduction does not occur, guide the arm into more abduction (up to 120 degrees = "high baseball" position). Continue gentle and steady traction and wait up to 15 minutes for spontaneous reduction.

8. After reduction (or to check for reduction), first adduct the arm by bringing the elbow to the patient's side, and then internally rotate the arm. Maintain light and steady traction during this movement.
9. Recheck and document distal circulation and status of axillary and peripheral nerves.
10. Immobilize using a sling and swathe.
11. Immobilize as comfortably as possible in the position of injury and transport if the attempt at reduction is unsuccessful or:
  - a) pain is significantly increased by manipulation; or
  - b) resistance to positioning is encountered.

### III. PATELLA

- A. Check and document distal circulation, motor and sensory function.
- B. Loosen the patellar tendon by flexing the hip and straightening the knee.
- C. After the hip is flexed and the knee straightened firmly push the patella medially back into normal position.
- D. Recheck and document distal circulation and status of peripheral nerves.
- E. Immobilize the leg in full extension.
- F. Immobilize as comfortably as possible in the position of injury and transport if the attempt at reduction is unsuccessful or:
  1. pain is significantly increased by manipulation; or
  2. resistance to positioning is encountered.

### IV. DIGITS

- A. Check and document distal circulation, motor and sensory function.
- B. Apply firm traction to the distal segment while applying distal pressure to the distal bone and restore it to normal anatomic position.
- C. Recheck and document distal circulation and status of peripheral nerves.
- D. Immobilize by splinting or by taping injured digit to the adjacent uninjured digit.
- E. Immobilize as comfortably as possible in the position of injury and transport if the attempt at reduction is unsuccessful or:
  1. pain is significantly increased by manipulation; or
  2. resistance to positioning is encountered.

## EXTREMITY TRAUMA

### I. MANAGEMENT

- A. **Follow Major Trauma protocol as indicated.**
- B. If the patient is not breathing adequately, **manage** the **airway** per the **Airway Management** protocols.
- C. If the **patient is breathing adequately** but has experienced serious trauma, administer **high flow O<sub>2</sub>, 10-15 liters** (85-100 percent) **by nonrebreather**. If the patient has experienced minor to moderate trauma, O<sub>2</sub> should be provided at levels dictated by the **Pulse Oximetry Protocol**.
- D. **Control bleeding** and cover open wounds with a sterile dressing. Clean debris from exposed bone ends and irrigate with normal saline if possible.
- E. **Straighten** angulated **extremities**. Apply gentle traction and align the extremity to its normal anatomical position. Stop straightening if there is a significant increase in pain or resistance is felt.
- F. **Splint** the injury by immobilizing the fracture site as well as the joint above and below the fracture.
- G. **Immobilize injured joints** in the position found, unless motor function, sensation or circulation is impaired distal to the joint. In such cases, apply gentle traction and align the extremity in its normal anatomical position. Stop straightening if there is a significant increase in pain or resistance is felt.
- H. **Splinting** recommendations for **specific injuries**:
  - 1. Pelvic fracture
    - a) Wrap pelvis in sheet extending from umbilicus to mid thigh. Pull sheet ends in opposite directions, applying pressure to pelvis. Secure sheet with wire ties, or tighten and secure as in application of a tourniquet (a knot will not be tight enough).
  - 2. Shoulder Girdle
    - a) Sling and swath
  - 3. Hip Dislocation
    - a) Immobilize to a backboard using padding to maintain the limb in a comfortable position.
  - 4. Hip Fracture
    - a) Place on padded backboard with pillow between legs.
  - 5. Femur fractures
    - a) Traction splint if isolated to shaft of femur.
- I. PASG may be used as a splint in cases of multiple leg fractures.
- J. Amputated parts should be wrapped in sterile gauze moistened with normal saline, protected from contamination (e.g., placed in a sterile rubber glove or zip lock bag) and put in ice water
- K. Establish **one or two IVs of normal saline or ringer's lactate**. Use a macrodrip administration set. Draw bloods if time allows.

- L. If signs and or symptoms of shock are present, **run the IV solution wide open, reassessing vital signs after every 250 ml.**
1. For **children less than eight**, **place** an intraosseous catheter (**IO**) if IV access cannot be quickly obtained. Use **20ml/kg fluid boluses** in place of wide-open fluids. Reassess after every bolus and repeat PRN
  2. If the patient has **shock**, **IVs** should be **started en route** to the receiving facility. Do not delay transport for IV access/fluid replacement.
  3. If the patient has an **uncontrollable hemorrhage** (e.g. internal bleeding), fluid resuscitate to and maintain a **systolic blood pressure of 90 mmHg**.
  4. If **hemorrhage is controllable**, resuscitate to **normal vital signs**.
- M. If the patient is experiencing **significant pain**, **contact medical control** and **consider** administering **morphine sulfate 2-5 mg** slow IVP titrated to pain relief. May repeat PRN up to max of 10 mg.

## HEAD TRAUMA

### I. MANAGEMENT

- A. **Follow Major Trauma protocol as indicated.**
- B. If indicated, **immobilize the spine.**
- C. If the patient is not breathing adequately, **manage the airway** per the **Airway Management** protocol and;
  - 1. Perform **endotracheal intubation** (by rapid sequence intubation if needed)
  - 2. Maintain normal respirations; adult – **12 bpm**, infant and child 8 years of age or less – **16 bpm**, infants – **20 bpm** unless;
    - a) The GCS score is 8 or less,
    - b) and active seizures or one or more of the following signs are present,
      - (1) *Fixed or asymmetric pupils*
      - (2) *Abnormal flexion or abnormal extension*
      - (3) *Hypertension and bradycardia in conjunction with altered mental status*
      - (4) *Intermittent apnea*
      - (5) *Further decrease in GCS score of 2 or more points*
    - c) If the above signs are seen, hyperventilate the adult patient at **20 bpm**, or child at **25** and infant bpm. **Do not hyperventilate unless the above criteria are met.**
- D. If the **patient is breathing adequately** but has experienced serious trauma, administer **high flow O<sub>2</sub>, 10-15 liters** (85-100 percent) **by nonrebreather**. If the patient has experienced minor to moderate trauma, O<sub>2</sub> should be provided at levels dictated by the **Pulse Oximetry Protocol**.
- E. **Treat bleeding** as indicated.
- F. For mild head injuries or if the patient is on a backboard and is not hypotensive, elevate the head slightly
- G. Establish **one or two IVs of normal saline**. Use a macrodrip administration set. Draw bloods if time allows.
- H. If signs and or symptoms of shock are present, **run the IV solution wide open, reassessing vital signs after every 250 ml.**
  - 1. If the patient has **shock**, **IVs** should be **started en route**.
  - 2. If the patient has an **uncontrollable hemorrhage**, fluid resuscitate to and maintain a **systolic blood pressure of 90 mmHg**.
  - 3. If **hemorrhage is controllable**, resuscitate to **normal vital signs**.
  - 4. For **children less than eight**, place an intraosseous catheter (**IO**) if IV access cannot be quickly obtained. Use **20ml/kg fluid boluses** in place of wide-open fluids. Reassess after every bolus and repeat PRN
- I. **Monitor ECG** lead II.

- J. If the patient shows signs and symptoms of increased intracranial pressure, contact medical control and **consider** administration of **mannitol 1g/kg** over 30 minutes.

## SOFT TISSUE TRAUMA

### I. MANAGEMENT

- A. **Follow Major Trauma protocol as indicated.**
- B. If the patient is not breathing adequately, **manage** the **airway** per the **Airway Management** protocols.
  - 1. **Consider** using rapid sequence intubation to **intubate the patient with an inhalation injury**.
- C. If the **patient is breathing adequately** but has experienced serious trauma, administer **high flow O<sub>2</sub>, 10-15 liters** (85-100 percent) **by nonrebreather**. If the patient has experienced minor to moderate trauma, O<sub>2</sub> should be provided at levels dictated by the **Pulse Oximetry Protocol**.
- D. **Control bleeding:**
  - 1. Locate the site of bleeding from the wound and apply **direct pressure**.
  - 2. **Elevate** the bleeding area above the level of the heart.
  - 3. **Pressure points** may be used if direct pressure is not effective.
  - 4. Consider using a **tourniquet** if the above methods fail to slow or stop bleeding.
- E. **Treat shock:**
- F. **Straighten** grossly angulated **extremities**.
- G. Care for **all open wounds** as follows:
  - 1. Expose the wound.
  - 2. Control bleeding.
  - 3. Clean debris from the wound surface.
  - 4. Dress and bandage wound.
- H. Treatment for **specific wounds:**
  - 1. Puncture wounds
    - a) Search for exit wound.
    - b) Immobilize spine if mechanism indicates.
  - 2. Impaled objects
    - a) Stabilize in place.
    - b) If object is in the cheek and both ends are visible, remove it by pulling it out in the direction that it entered the cheek.
    - c) Remove only if patient cannot be safely transported with object in place.
  - 3. Partial Avulsions
    - a) Clean the wound surface and replace the flap.
  - 4. Amputations and complete avulsions
    - a) Treat stump or injured site as for any soft tissue injury.
    - b) Wrap amputated or avulsed part in gauze moistened with normal saline, place part in plastic bag and keep it cool (not frozen).



5. Open neck wound
  - a) Apply an occlusive dressing and secure, being careful not to compromise breathing.
  - b) Try to keep neck below level of heart.
- I. **Burns**
  1. Thermal or electrical
    - a) Stop the burning process.
    - b) Remove any smoldering clothing and jewelry on affected limbs.
    - c) Apply **moist dressings** to burns totaling **less than 10%** body surface area (**BSA**).
    - d) Apply a **dry dressing** to burns **over 10% BSA**.
  2. Chemical
    - a) Use care not to contaminate yourself.
    - b) Remove any clothing that had come into contact with the chemical.
    - c) Irrigate with copious amounts of water. Brush any dry products off before irrigating. Be careful and try to control the run off.
    - d) Remove any jewelry on affected limbs.
  3. If the patient has **circumferential full thickness burns** and decreased distal circulation and or decreased chest wall excursion, **contact medical control** and **consider** performing **escharotomy**.
- J. Establish **one or two IVs of normal saline or ringer's lactate**. Use a macrodrip administration set. Draw bloods if time allows.
- K. If signs and or symptoms of shock are present, **run the IV solution wide open, reassessing vital signs after every 250 ml**.
  1. For **children less than eight**, place an intraosseous catheter (**IO**) if IV access cannot be quickly obtained. Use **20ml/kg fluid boluses** in place of wide-open fluids. Reassess after every bolus and repeat PRN
  2. If the patient has **shock**, **IVs** should be **started en route** to the receiving facility. Do not delay transport for IV access/fluid replacement.
  3. If the patient has an **uncontrollable hemorrhage** (e.g. internal bleeding), fluid resuscitate to and maintain a **systolic blood pressure of 90 mmHg**.
  4. If **hemorrhage is controllable**, resuscitate to **normal vital signs**.
- L. For **burn patients**, **administer Ringer's Lactate 4ml/kg/%BSA burned** (only count 2<sup>nd</sup> or 3<sup>rd</sup> degree burns toward TBSA burned). Give ½ of the calculated amount over the first eight hours post burn and the remainder within 24 hours post burn.
- M. If the patient is experiencing **significant pain**, **contact medical control** and **consider** administering **morphine sulfate 1-5 mg** slow IVP titrated to pain relief. May repeat PRN up to max of 10 mg.

# ENVIRONMENTAL



## **AVALANCHE BURIAL**

### **I. EVALUATION AND TREATMENT**

- A. If patient is determined to be pulseless (after a pulse check of up to 60 seconds) and burial time is estimated to be less than 35 minutes, perform CPR for up to 30 minutes.
- B. If patient is determined to be pulseless (after a pulse check of up to 60 seconds) and burial time is estimated to be more than 35 minutes, perform CPR if an air pocket is present or uncertain. If no air pocket – do not perform CPR.
- C. Assess carefully for associated injuries. Follow the Major trauma Protocol.
- D. Follow the protocol on Hypothermia for additional therapy as needed.
- E. If the main problem is not severe hypothermia, medication should be used as in the normothermic patient
- F. Fluid therapy should be given as indicated but never at a “to keep open” rate, which may result in a frozen IV line. Boluses of warm fluid should be given as needed.



## **COLD WATER NEAR DROWNING:**

### **I. EVALUATION AND TREATMENT**

- A. A personal flotation device should be worn by all rescuers when working on or near water.
- B. Use abdominal thrusts only when a solid foreign body airway obstruction is suspected.
- C. Start CPR if the patient is pulseless after a pulse check of up to 60 seconds
- D. The CWND victim may not be severely hypothermic and should be resuscitated aggressively with CPR/ACLS.
- E. Assess carefully for associated injuries.
- F. Follow the appropriate section of the **Hypothermia** protocol (including the 60 second pulse check) for additional therapy as needed.



## **DIVING EMERGENCIES**

### **I. GENERAL TREATMENT**

- A. If the patient is not breathing adequately, **manage** the **airway** per the **Airway Management** protocols.
- B. If patient is breathing adequately, **administer O<sub>2</sub>**, 10-15 lpm by nonrebreather mask. Use a nasal cannula at 1-6 lpm if the patient is agitated by the mask.
- C. Prevent heat loss and rewarm as appropriate.
- D. Transport the patient in position of comfort, by ground, in an aircraft pressured to sea level, or by aircraft flying at lowest safe altitude (less than 1,000 feet, if possible).

### **II. MANAGEMENT-ACUTELY SICK DIVE EMERGENCY PATIENTS**

- A. Initiate rapid transport to a medical facility.
- B. Document changes in the patient's signs, symptoms, and vital signs.
- C. Anticipate seizures and treat by protecting the patient during the seizure and resuming the administration of oxygen as soon as possible.
- D. Start an **IV** and give a **500 ml bolus of normal saline**, followed by an **infusion of 250 ml/hr**.
- E. If patient seizes, follow seizure protocol.

### **III. MANAGEMENT-STABLE DIVE EMERGENCY PATIENTS**

- A. If the patient is not receiving IV fluids, give the patient warm, non-alcoholic fluids if this can be accomplished without interrupting the delivery of oxygen. Plain water is best. Fluids containing large amounts of sugar or caffeine should be avoided because of their diuretic potential.
- B. Oxygen should be continued until the patient reaches the medical facility.
- C. Perform a baseline neurological examination which tests at least orientation, eyes, facial movement, hearing, sensory perception, and balance and coordination, if possible.
- D. Transport to a medical facility for further evaluation and treatment.





## **FROSTBITE**

### **I. MANAGEMENT**

#### **A. Concerns:**

1. Do not rub the frozen part;
2. Do not allow the patient to have alcohol or tobacco;
3. Do not apply ice or snow;
4. Do not attempt to thaw the frostbitten part in cold water;
5. Do not attempt to thaw the frostbitten part with high temperatures such as those generated by stoves, exhaust, etc.; or
6. break blisters which may form.

B. Treatment of deep frostbite is usually extremely painful and best accomplished in a medical facility. In most circumstances, the risks posed by improper rewarming or refreezing outweigh the risks of delaying treatment for deep frostbite.

C. If transporting a patient with frostbite that will not be rewarmed in the field, the medical provider should protect the frostbitten parts from additional injury and temperature changes.

D. Protect the rewarmed area from refreezing and other trauma during transport. A frame around the frostbitten area should be constructed to prevent blankets from pressing directly on the injured area.

E. Do not allow an individual who has frostbitten feet to walk except when the life of the patient or rescuer is in danger. Once frostbitten feet are rewarmed, the patient becomes nonambulatory.

F. Shock due to frostbite is very uncommon. However, medical personnel should always be alert for shock and begin treatment at the earliest sign it is developing. If the frostbite patient develops shock, personnel should perform a thorough examination for additional injuries.



## HEAT EMERGENCIES

### I. MANAGEMENT

- A. Remove patient to **safe environment** before starting treatment.
- B. If the patient is not breathing adequately, **manage** the **airway** per the **Airway Management** protocols.
- C. If patient is breathing adequately, **administer O<sub>2</sub>**, 10-15 lpm by nonrebreather mask. Use a nasal cannula at 1-6 lpm if the patient is agitated by the mask.
- D. **Position patient** to satisfy his or her physiological needs. Supine - to protect the airway. Supine with legs elevated-if are hypotensive. In a sitting position - if not hypotensive. On side-if vomiting.
- E. **Treat for shock.**
- F. Determine if there is a **history** of heat exposure. Assess temperature of the environment and exertion level.
- G. **Cool patient.**
  - 1. Passively cool patients with heat cramps. Place patient in air-conditioned room or in the back of the ambulance.
  - 2. Heat exhaustion patients should have clothing removed and be placed in cool environment.
  - 3. For the heatstroke patient immediate cooling is the priority. Wet patient down. Fan briskly. Run air conditioner at high level. Use ice packs if available. Apply to groin, under the armpits, sides of chest, head and neck.
- H. Begin **oral rehydration** if indicated for non-complicated heat cramps or minor heat exhaustion. Use water or balanced electrolyte solution such as Gatorade, Allsport, etc.
- I. Establish **one or two IVs of normal saline**. Use a macrodrip administration set. Draw bloods as time allows.
- J. If signs and or symptoms of shock are present, **run the IV solution wide open, reassessing vital signs after every 250 ml.**
  - 1. For **children less than eight**, **place** an intraosseous catheter (**IO**) if IV access cannot be quickly obtained. Use **20 ml/kg fluid boluses** in place of wide-open fluids. Reassess after every bolus and repeat PRN
- K. **Monitor ECG lead II.** Treat any dysrhythmias according to the **Dysrhythmia** protocol.
- L. If patient has decreased level of consciousness, insert foley catheter and infuse IV fluids to maintain urine output at 1-2ml/kg/hour.



## **HYPOTHERMIA**

### **I. ALL COLD PATIENTS:**

- A. **Careful handling** is the highest priority
- B. **Prevent further heat loss.**
  - 1. Remove wet clothing if in shelter. Cut clothing off to avoid excessive movement.
  - 2. Cover the head and neck.
  - 3. Insulate above and below.
  - 4. Protect from the wind.
  - 5. Apply insulated heat packs to high heat transfer/loss areas such as the head, neck, underarms, sides of the chest, and groin.
  - 6. Cover with a vapor barrier (such as a plastic garbage bag).
  - 7. Move the patient to a warm environment.
  - 8. Consider covering patient's mouth and nose with a light fabric to reduce heat loss through respirations.
  - 9. Chemical heat packs slow cooling but do not rewarm. They are best used on hands and feet to prevent frostbite.
- C. **Rewarm**
  - 1. **If patient is alert** enough to swallow, give **food and drinks high in calories**. The calories will increase ability to shiver which is most effective field rewarming.
    - a) Do not give alcohol.
  - 2. Exercise drops temperature and then increases it but, this is not as effective as shivering. If dry and fed and shivering, mild exercise is OK
- D. Oxygen should be heated and humidified, if possible to a maximum of 108 ° F (42° C).
- E. Splinting should be performed, when indicated, with caution to prevent additional injuries to frostbitten tissues.
- F. Treat and transport to a medical facility.

### **II. MILD HYPOTHERMIA:**

- A. Treat the patient as outlined above.
- B. If there is no way to get to a medical facility, rewarm the patient gradually by:
  - 1. Warm showers or warm bath if the patient is alert.
  - 2. Placing patient in a sleeping bag and providing contact with a warm body.

### **III. SEVERE HYPOTHERMIA WITH SIGNS OF LIFE:**

- A. Treat the patient as outlined above with the following exceptions:
  - 1. Do **not** put severely hypothermic patients in a shower or bath.

2. Do **not** give a patient oral fluids or food unless he or she is capable of swallowing and protecting his or her airway.
3. Do **not** attempt to increase heat production through exercise.

IV. SEVERE HYPOTHERMIA WITH NO LIFE SIGNS:

- A. Rewarming is key to arrest survival in hypothermia. Field techniques are ineffective. The goal is to deliver a viable patient to a facility that can perform effective rewarming (most clinics and hospitals).
- B. Treat as above.
- C. Use **mouth-to-mask** breathing.
- D. An AED or monitor may help determine cardiac activity. If any organized (other than VT) electrical rhythm is shown, do not start CPR.
- E. If no pulse (after checking for up to 60 seconds) and no respirations and no contraindications, start CPR. Initiation of chest compressions should only follow careful and adequate ventilation for 3 minutes.
- F. Ventilate for at least 3 minutes with 100% O<sub>2</sub> prior to intubation attempts.
- G. Be careful to not hyperventilate patient-blows off CO<sub>2</sub> and causes vasoconstriction.
- H. If CPR can not be continued, it should not be started.
- I. If facility or transport unit is available in less than 3 hours, do not start CPR. If not, and indicated, do CPR for 30 minutes and terminate if no response.
- J. If the core temperature is **86° (30°C) or greater, defibrillation may be used** when indicated. If core is less than 86° F (30°C), one set of three stacked shocks may be given if indicated.
- K. If resuscitation has been provided in conjunction with rewarming techniques for more than 60 minutes without the return of spontaneous pulse or respiration, contact the base physician for recommendations. If contact with a physician is not possible and delivery of the patient to the receiving facility will be delayed, Emergency Medical Technicians may consider terminating the resuscitation in accordance with AS 18.08.089.

V. IV THERAPY

- A. Many hypothermic patients are dehydrated and may require aggressive fluid resuscitation. The field goal is volume expansion not rewarming.
  1. Use bolus therapy for volume expansion to endpoint of normalization of vital signs; specifically heart rate.
- B. IV's should be heated to patient's current core temperature or greater. 98-104° F (37-40° C) is ideal.
- C. The recommended fluid for rehydration is a balanced salt solution, such as normal saline or ringer's lactate.
- D. Do not use TKO lines in hypothermic patients. Use a saline lock.

VI. MEDICATIONS:

- A. Indications for medications are the same for mildly hypothermic patients as they are for normothermic patients.
- B. In the patient with a core temperature of less than 86°F (30° C) medications should be withheld.
  - 1. Medications are inefficient and poorly metabolized in the hypothermic patient. In addition, due to delayed metabolism, medications given in normal therapeutic doses to severely hypothermic patients can result in toxicity when the patient is rewarmed.
- C. As with any person with altered consciousness, Narcan and 50% dextrose should be considered when there is a reasonable suspicion that their use is warranted.
- D. Sodium bicarbonate is not to be used unless specifically ordered by a physician.





# PROCEDURES

**Note:**

*As is the case with any advanced life support treatment provided by an EMT or MICP, the following ALS procedures may only be performed under the direction of a physician, either by direct verbal communications or through physician signed standing orders.*

*Some procedures listed in this section are not authorized in the EMT Scope of Certified Activities 7 AAC 26.040. Authorization must be obtained by the service medical director through the State EMS office by following 7 AAC 26.670 before an EMT may perform those procedures.*

## **BASIC AIRWAY MANAGEMENT**

### **I. MANUAL MANEUVERS:**

#### **A. Head tilt, chin lift:**

1. Indications:
  - a) The head tilt, chin lift maneuver shall be used to initially open and assure a patient airway in all non-trauma patients with altered level of consciousness.
2. Contraindications:
  - a) The head tilt, chin lift maneuver is contraindicated in cases of trauma.

#### **B. Modified jaw thrust:**

1. Indications:
  - a) The modified jaw thrust shall be used to initially open the airway of any patient with altered consciousness when there is suspicion of trauma.
2. Contraindications:
  - a) There are no contraindications to this procedure, however, it may cause discomfort to the patient.

#### **C. Jaw lift:**

1. Indications:
  - a) This procedure is used when placing an oral airway. It is a transitional technique from manual to mechanical maneuvers.
2. Contraindications:
  - a) There is a high risk of injury to the EMT's fingers when performing this procedure. It is therefore contraindicated in any patient who has the potential to bite the EMT.

#### **D. Sellick's maneuver:**

1. Indications:
  - a) To prevent gastric distension and regurgitation when performing bag-valve-mask ventilation.
  - b) When needed (requested), to position the larynx for intubation.
2. Contraindications:
  - a) This procedure is relatively contra-indicated in pediatric patients because the trachea is soft and easily occluded. It is also difficult to identify the anatomy in pediatric patients.

### **II. BASIC MECHANICAL ADJUNCTS:**

#### **A. Oropharyngeal (Oral) airway:**

1. Indications:
  - a) The oral airway should be used as tolerated for any patient with altered consciousness or airway insufficiency.

- b) After successful endotracheal intubation, the oral airway should be inserted to serve as a bite block.
    - 2. Contraindications:
      - a) The oral airway is contraindicated in patients who do not tolerate insertion of the device. (i.e. gag reflex)
  - B. **Nasopharyngeal (Nasal) Airway:**
    - 1. Indications:
      - a) The nasal airway is to be used in any patient who cannot maintain his or her airway but will not tolerate an oral airway.
    - 2. Contraindications:
      - a) The nasal airway is contraindicated in any patient who may have a facial or lower skull fracture.
      - b) This airway is also contraindicated if the nose is obstructed.
- III. VENTILATION:
- A. Attempts to ventilate are essentially useless until an open airway has been established.
    - 1. Consider placing more than one basic adjunct e.g., two NPAs or an NPA with an OPA.
  - B. **Mouth to Mask Ventilation:**
    - 1. This technique should be used until a bag-valve-mask is available.
  - C. **Bag-Valve Mask-(Adult):**
    - 1. Indications:
      - a) The BVM should be used for any patient with the following conditions:
        - (1) *apnea;*
        - (2) *respiratory rate greater than 30 or less than 10;*
        - (3) *inadequate or insufficient ventilation within any respiratory rate.*
    - 2. Contraindications:
      - a) There are no contraindications to the use of a bag-valve-mask.
- IV. SUCTIONING:
- A. **Pharyngeal Suction:**
    - 1. Indications:
      - a) Pharyngeal suctioning is indicated whenever substances like blood, mucus, vomit, food particles etc. are present in the upper airway.
    - 2. Contraindications:
      - a) Hypoxia is a relative contraindication to pharyngeal suctioning.
      - b) However, it may be necessary to remove matter from the airway to prevent hypoxia.

- c) Pre-ventilation with 100% O<sub>2</sub> reduces hypoxia associated with suctioning.

V. TABLE OF TREATMENT ADJUNCTS:

Adjunct	Indications	Contraindications	Comments
Suction	Indispensable for all patients with fluid or particulate debris in airway	None	No more than 15 seconds per attempt
Modified jaw thrust	Initial airway maneuver for all trauma patients	None	None of these adjuncts protects against aspiration in patient with depressed consciousness
Hyperextension of neck	Opening airway of non-trauma patient	Potential cervical spine injury	
Nasal airway	Obstruction by tongue with gag reflex present	Potential mid-face injury	
Oral airway	Obstruction 2° to tongue, etc.	Positive gag reflex	

## **ADVANCED AIRWAY MANAGEMENT**

### **I. DUAL LUMEN AIRWAY DEVICE**

#### **A. Indications**

1. Intubation alternative for less experienced providers.
2. Difficult airway.
3. Failed intubation.

#### **B. Contraindications**

1. Patients under age 16
2. Intact gag reflex
3. Known esophageal disease
4. Caustic ingestion

### **II. LARYNGEAL MASK AIRWAY (LMA)**

#### **A. Indications:**

1. Intubation alternative for less experienced providers.
2. Difficult airway.
3. Failed intubation.

#### **B. Contraindications:**

1. Vomiting
2. Gag reflex

### **III. ENDOTRACHEAL INTUBATION:**

#### **1. Indications:**

- a) Airway obstruction.
- b) Cardiac Arrest
- c) Prolonged bag-valve mask ventilation
- d) Patient inability to protect airway.
- e) Shock, coma, severe head injury with Glasgow Coma score  $\leq 8$ .
- f) Severe respiratory distress that is not improved after treatment.
- g) Flail chest or other severe chest injuries
- h) Inhalation injuries.
- i) Early intubation is strongly recommended for patients who have burns to the head, neck, or upper chest.

#### **2. Contraindications:**

- a) Trauma-must use modified technique if cervical spine trauma is a possibility.
- b) Patient intolerance is only a relative contraindication to this procedure.

#### **B. Orotacheal Direct Viewing (Traumatic Mechanism of Injury):**

##### **1. Indications:**

- a) Any of the previous indications in the setting of trauma.
- 2. Contraindications:
  - a) Patient intolerance is a relative contraindication to this procedure.

#### IV. RAPID SEQUENCE INTUBATION (RSI) (MICP Level Only)

##### A. INDICATIONS:

- 1. To assist in intubation in a conscious patient or those with an intact gag reflex; to decrease risk of aspiration;
- 2. to allow transport of critically ill or injured combative patients;
- 3. and to minimize increases in intracranial pressure during intubation.

##### B. CONTRAINDICATIONS

- 1. Cardiac arrest.
- 2. Predicted difficult airway (relative.)
  - a) Less than 3 finger width jaw opening;
  - b) less than 3 fingers from chin to hyoid;
  - c) less than 3 fingers from thyroid cartilage to sternal notch.

#### V. RETROGRADE INTUBATION

##### A. Indications:

- 1. Same indications as for tracheal intubation: unconsciousness, respiratory distress, or upper airway obstruction.
- 2. Failure of conventional techniques of tracheal intubation (nasal and oral), including blind tracheal intubation.
- 3. Bridge from needle cricothyrotomy to intubation.

#### VI. CRICOTHYROTOMY

- A. This is the procedure of choice when presented with a patient who cannot be ventilated or intubated.

## VII. TABLE OF TREATMENT ADJUNCTS:

Adjunct	Indications	Contraindications	Comments
Dual Lumen Airway device	Inexperienced provider. Unable to intubate	16 or less Under 5' Intact gag Esophageal disease Caustic ingestion	Difficult to manage if secretions/vomit between cuffs.
Laryngeal Mask Airway	Inexperienced provider. Unable to intubate	Gag Reflex Vomiting	Does not provide complete protection from aspiration.
Orotracheal intubation	Failure of basic maneuvers; provides airway protection	None	Difficult in patients with severe maxillofacial injuries
Nasotracheal Intubation	Conscious intubation, clenched jaw, severely obese	Apnea, facial/head injuries	Must be breathing
Rapid Sequence Intubation	Respiratory failure	Relative to medications	Only by very experienced MICPs
Retrograde intubation	Failure to intubate by viewing or blind Bridge device	None	Time consuming
Surgical Cricothyrotomy	Unable to ventilate Unable to intubate	Able to ventilate by other means	

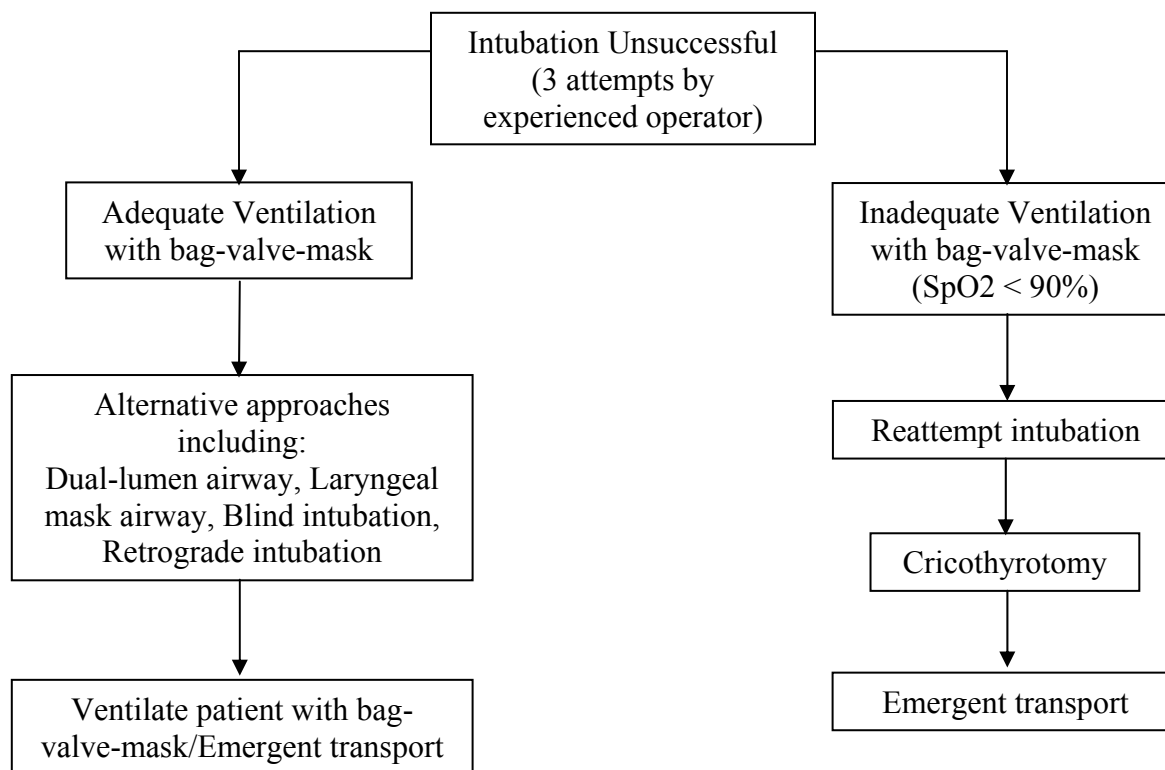
## VIII. MEDICATIONS THAT CAN BE ADMINISTERED BY TRACHEA:

Lidocaine
Epinephrine
Atropine
Narcan



## FAILED AIRWAY ALGORITHM

The following algorithm is a modification of the American Society of Anesthesiologist's difficult airway algorithm. It should be followed in cases when the patient cannot be intubated with initial attempts. If successful at one level, there is no need to progress to the next level. The patient should be emergently transported as soon as adequate ventilation is established. If the patient cannot be ventilated adequately at any time, move to the inadequate ventilation section.



**PULSE OXIMETRY****I. TREATMENT GUIDELINES**

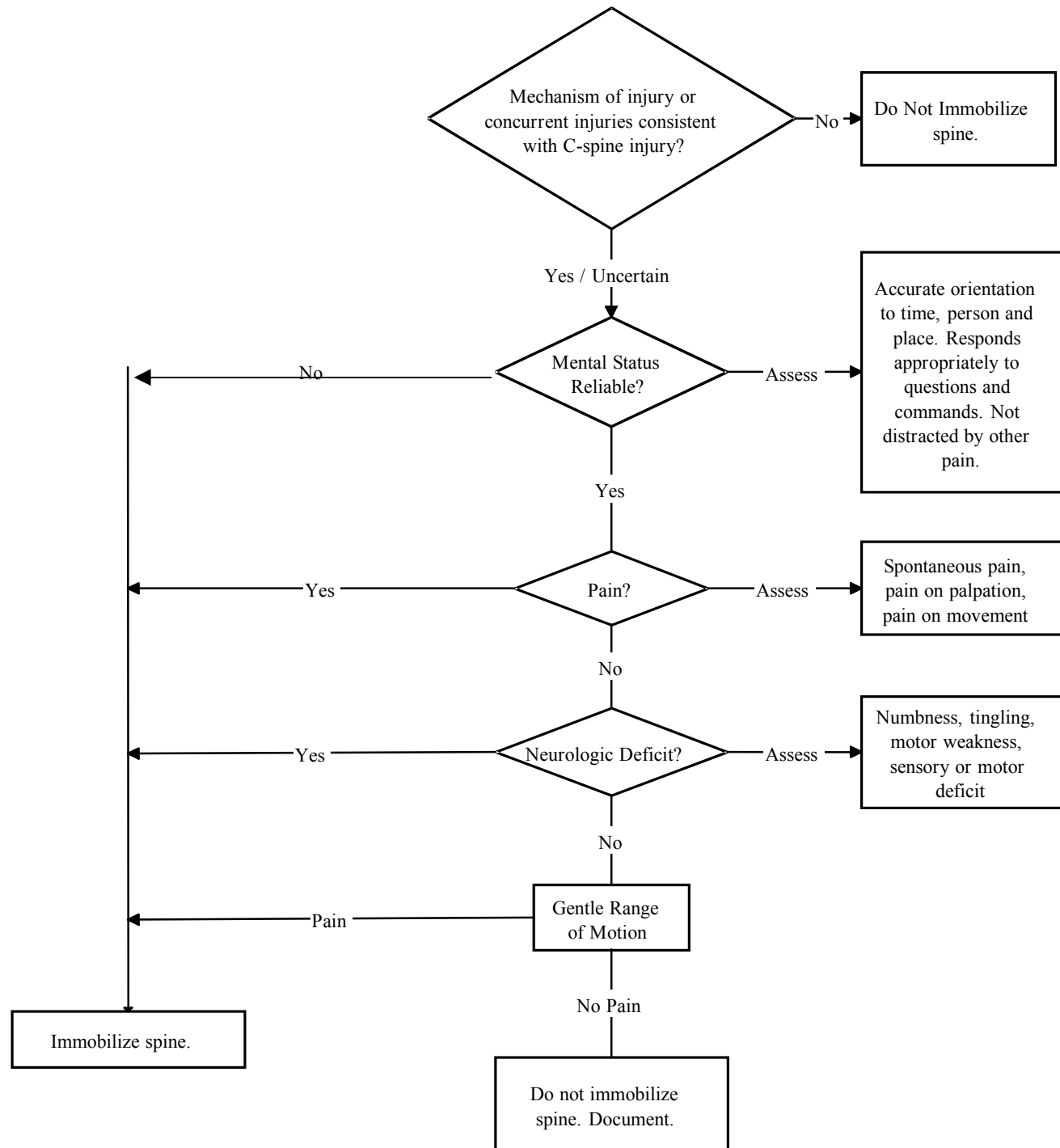
A. For persons with underlying respiratory disease, titrate oxygen to maintain a normal saturation for that individual.

B. For persons without respiratory disease at sea level:

SpO <sub>2</sub> READING	INTERPRETATION	ACTION
100% TO 95%	Ideal Range	Oxygen therapy as indicated by patient signs and symptoms, mechanism of injury, or nature of illness
95% TO 90%	Mild to Moderate Hypoxemia	Oxygen therapy as indicated by patient signs and symptoms, mechanism of injury, or nature of illness
90% TO 85%	Severe Hypoxemia	Check airway, start aggressive O <sub>2</sub> therapy, high flow O <sub>2</sub> via nonrebreather mask @ 15 lpm Consider bag valve mask ventilation with 100% O <sub>2</sub>
85% OR LESS	Respiratory Failure	Prepare to intubate or assist ventilations with 100% O <sub>2</sub> and bag-valve-mask



## SPINAL IMMOBILIZATION ALGORITHM





# REFERENCE



**CELSIUS TO FARENHEIT CONVERSIONS**

<b>Celsius</b>	<b>Fahrenheit</b>
44.0	111.2
43.0	109.4
42.0	107.6
41.0	105.8
40.0	104.0
39.0	102.2
38.0	100.4
37.0	98.6
36.0	96.8
35.0	95.0
34.0	93.2
33.0	91.4
32.0	89.6
31.0	87.8
30.0	86.0
29.0	84.2
28.0	82.4
27.0	80.6
26.0	78.8
25.0	77.0
24.0	75.2
23.0	73.4
22.0	71.6
21.0	69.8
20.0	68.0
19.0	66.2
18.0	64.4
17.0	62.6
16.0	60.8
15.0	59.0
14.0	57.2
13.0	55.4
12.0	53.6
11.0	51.8
10.0	50.0



**GLASGOW COMA SCALE**

<b><u>Adult/Child</u></b>	<b><u>BEST</u></b>	<b><u>INFANT</u></b>
	<b>Eye Opening</b>	
Spontaneous	4	Spontaneous
To Voice	3	To speech
To Pain	2	To pain
None	1	No response
	<b>Verbal Response</b>	
Oriented	5	Coos, babbles
Confused	4	Irritable, cries
Inappropriate	3	Cries to pain
Incomprehensible	2	Moans, grunts
No response	1	No response
	<b>Motor Response</b>	
Obeys commands	6	Spontaneous
Localizes pain	5	Localizes pain
Withdraws	4	Withdraws
Flexion	3	Flexion
Extension	2	Extension
No response	1	No response
Total	3-15	Total

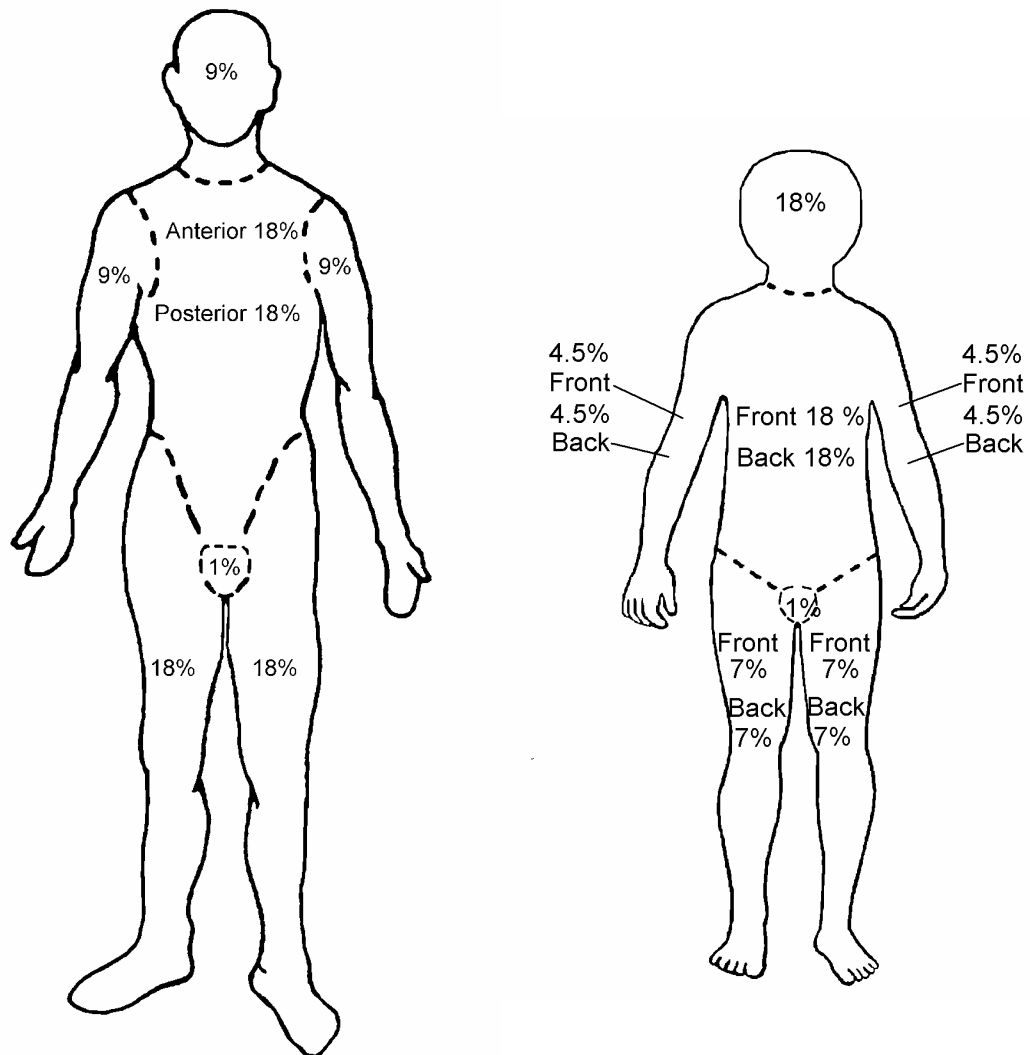
**PEDIATRIC VITAL SIGNS**

<b>Pediatric Vital Signs</b>			
Age	Pulse	Resp	BP (systolic)
Birth	100-180	30-60	40-60
Neonate	100-160	30-60	60-90
Infant	100-140	30-60	80-100
Toddler	80-120	20-30	80-110
School Age	60-120	18-30	80-110
Adolescent	60-100	12-16	90-120

**TELEPHONE NUMBERS**

<b>Local Dispatch</b>	
<b>Medical Control</b>	
<b>Local Medical Facility</b>	
<b>Receiving Hospital</b>	
<b>Local Medevac</b>	
<b>Police</b>	
<b>Office of Children's Services</b>	1-800-478-4444
<b>Senior and Disability Services</b>	1-800-478-9996
<b>US Coast Guard</b>	1-800-478-5555
	225-5666 Juneau
	271-6700 Anchorage
<b>Poison Control</b>	1 800-222-1222
<b>Radio Frequencies</b>	
<b>SAR</b>	
<b>Dive Rescue</b>	
<b>Suicide Prevention</b>	1-800-SUICIDE

## RULE OF NINES





## ABBREVIATION LIST

ABC	airway, breathing, circulation	DT	delirium tremens
abd	abdominal	ECG	electrocardiogram
ABG	arterial blood gas	ED	emergency department
ACLS	Advanced Cardiac Life Support	eg	for example
AED	automated external defibrillation	EMS	emergency medical service
AHA	American Heart Association	EMT	emergency medical technician
AICD	automatic implantable cardioverter/ defibrillator	ET	endotracheal tube
AIDS	acquired immunodeficiency syndrome	ETA	estimated time of arrival
ALS	advanced life support	ETOH	ethyl alcohol
AMI	acute myocardial infarction	ETT	Emergency Trauma Technician
ASAP	as soon as possible	F	Fahrenheit
ASR	acute stress reaction	FiO2	fraction of inspired oxygen
AVPU	alert, voice, pain, unresponsive	Fr	french
BG	blood glucose	Fx	fracture
BLS	basic life support	GCS	Glasgow coma scale
BP	blood pressure	GI	gastrointestinal
BSA	body surface area	gm	gram
BSI	body substance isolation	gtts	guttae (drops)
C	centigrade	GU	genitourinary
c/o	complaint of	HAZMAT	hazardous materials
CDC	Centers for Disease Control	Hg	mercury
CHB	complete heart block	HR	heart rate
CHF	congestive heart failure	HTN	hypertension
CISD	critical incident stress debriefing	Hx	history
CISM	critical incident stress management	ICP	intracranial pressure
CME	continuing medical education	IM	intramuscular
CNS	central nervous system	IO	intraosseous
CO2	carbon dioxide	IV	intravenous
COPD	chronic obstructive pulmonary disease	IVP	IV push
CPR	cardio pulmonary resuscitation	J	joule
CSF	cerebral spinal fluid	Kg	kilogram
C-spine	cervical spine	LMA	laryngeal mask airway
CT	computerized tomography	LMP	last menstrual period
D50	dextrose 50%	LOC	loss of consciousness
D5W	dextrose 5% and water	LR	lactated ringers
		MCI	mass casualty incident
		MDI	metered dose inhaler
		mEq	milliequivalent
		mg,	milligram
		MI	myocardial infarction
		Min	minute
		MOI	mechanism of injury
		MVC	motor vehicle crash

NG	nasogastric	prn	pro re nata (as needed)
NPA	nasopharyngeal airway	psi	pounds per square inch
NPO	nil per os (nothing by mouth)	Pt	patient
NRB	non-rebreathing mask	PVC	premature ventricular contraction
NS	normal saline	RN	registered nurse
NTG	nitroglycerin	RSI	rapid sequence induction
O2	oxygen	SL	sublingual
OPA	oropharyngeal airway	SpO2	pulse oxygen saturation (pulse oximetry)
OPQRST	onset, provocation, quality, radiation, severity, time	SQ	subcutaneous
P	pulse	ST	sinus tachycardia
PASG	pneumatic anti-shock garment	SVT	supraventricular tachycardia
PE/Kg	Phenytoin Equivalent	TCP	transcutaneous pacer
PEA	pulseless electrical activity	VF	ventricular fibrillation
PFD	personal flotation device (life jacket)	VS	vital signs
PMH	past medical history	VT	ventricular tachycardia
PO	per os (by mouth)	WCT	wide complex tachycardia
PPE	personal protection equipment	wt	weight
PPV	Positive pressure ventilation	yo	year old